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CHANGING DEMANDS ON EDUCATION AND THEIR FISCAL IMPLICATIONS.

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In exploring the economics of education this report discusses and extensively quotes the findings and conclusions of research dealing with (1) the demands of modern technology on the public schools, (2) the relation of education to individual earnings, (3) education as an investment in human capital and as a factor in national economic growth, (4) the effect of education on particular segments of production, (5) the losses to the individual and the society that result from inadequate schooling, (6) the requisites for developing a productive system of public education, (7) the adequacy of present financial support of the schools and required future expenditures, and (8) necessary fiscal action to provide adequate financing for the schools. One section of the report deals specifically with school dropouts. (EF)

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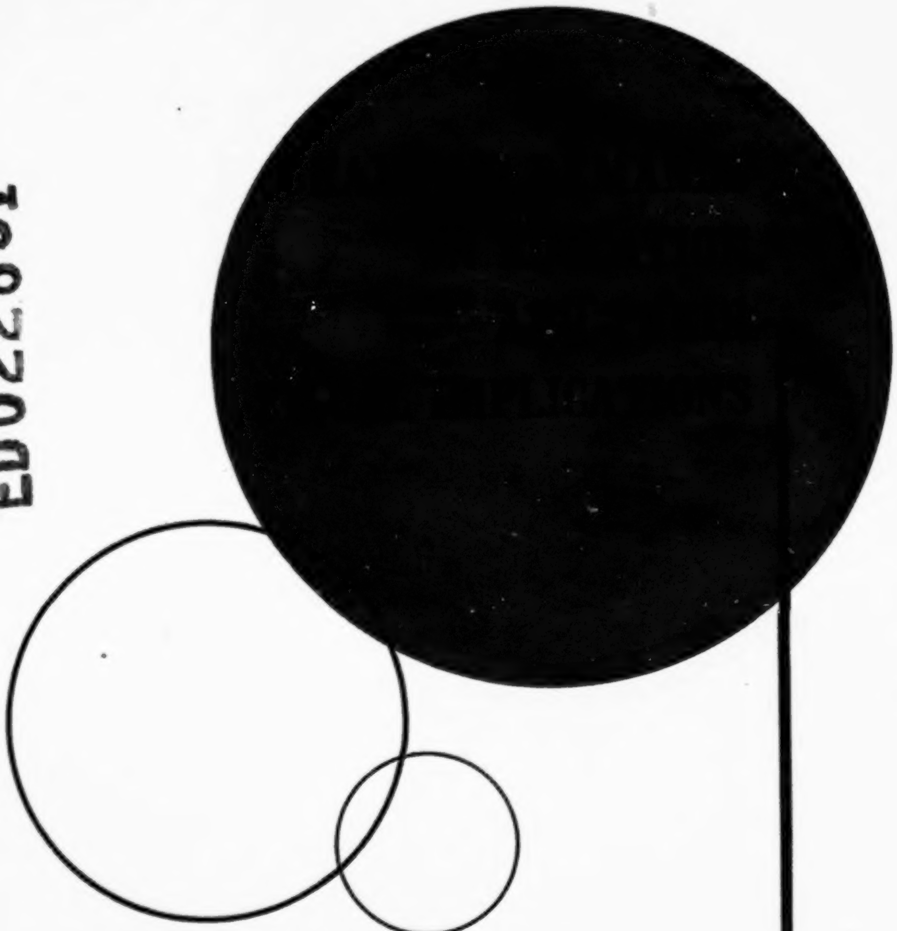

A report prepared by John K. Norton

for the

NATIONAL COMMITTEE FOR
SUPPORT OF THE PUBLIC SCHOOLS
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1963

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Foreword

The hope of our free society lies in the public schools. It is here that the society of tomorrow begins to take shape; here that the spark, the strength, the character of our democracy is generated.

The National Committee for Support of the Public Schools was organized in January 1962 by a bipartisan group of community leaders who believe that the survival and progress of the United States depend as never before upon full development of our human resources. That our school system is a good one is unquestionably true. It is equally true that it has not kept pace with the mounting demands of the times.

A much stronger national determination to improve the scope and quality of public education is urgently needed. Accordingly, the Committee has these objectives:

1. To publicize individual and social benefits which accrue from investment in the right kind and amount of public education

2. To focus public attention on individual and social problems associated with inadequate schooling of a considerable percent of citizens

3. To point out areas of educational policy and action essential for full development of human resources

4. To identify fiscal action essential to adequate financial support for effective public education at all levels, from kindergarten through grade 14.

The public school problem challenges each member of every community. Efforts to develop a system of public education to meet the demands of today and tomorrow should be based on fact and on thoughtful deliberation. Accordingly, the Committee's program emphasizes factual studies, believing that people will act when they are fully informed.

This report, *Changing Demands on Education and Their Fiscal Implications*, is the Committee's first effort to increase understanding and to stimulate organized effort on behalf of public schools throughout the country. We hope that it will lead many citizens to examine carefully the urgency and the dimensions of the school problem and to unite in a common effort to make more effective use of education in developing our human resources.

AGNES E. MEYER, *Chairman*
National Committee for Support of the Public Schools

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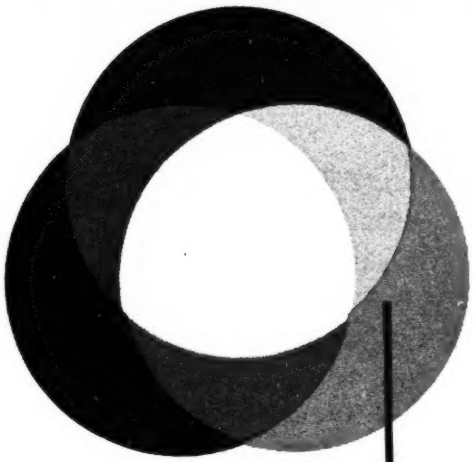

Field of This Report

I

This report is concerned primarily with the interrelations of education and economics as they affect the well-being of the individual and the nation. This emphasis in no sense implies that economic considerations should predominate in determining the purposes and content of public education.

The fact is, however, that regardless of the point of view one takes concerning this public service, it is costing a lot of money and, according to careful estimates, will cost more with each passing year.

This fact tends to evoke two differing reactions. One point of view, while acknowledging that values accrue to society from quality education, maintains that expenditures for public schools fall on the consumption side of the economic ledger. This point of view holds that taxes decrease the amount of capital available for investment. Hence, public school expenditures are something on which we must "save" if investment and economic growth are not to be hampered.

Another point of view that has received increasing attention in recent years is one that maintains that wise expenditure for education is economic investment. By developing human resources through education and other services such as health programs, a stock of human capital is built up which is an essential ingredient of a productive and viable economy.

The point of view of this report is that expenditure for good schools is both a high order of consumption and an essential form of investment. This should be taken into account in determining what amounts may wisely be budgeted for public education.

Education for intellectual development and for informed and perceptive minds was never needed more than it is today. The danger is that when education is thought of solely in these lofty and noble terms it is likely to suffer financial limitations which will prevent full achievement of both its intellectual and its economic goals. The latter cannot be ignored in a nation such as the United States, in which world leadership and even survival depend upon economic power.

Accordingly, this report explores the economics of education from several approaches. It deals with these questions:

1. What are some of the major demands of modern technology on the public schools?
2. What is the relation of education to individual earnings?
3. What new insights and evidences are economists developing concerning education as investment in human capital and as a factor in national economic growth?
4. What is the effect of education when its full power is focused on a particular segment of production?
5. What are the individual and social penalties resulting from denial of adequate schooling to a considerable percentage of our population?
6. What are some of the requisites for the development of a system of public education which is right in amount and kind?
7. Has the financial support of public schools been sufficiently responsive to the demands made upon them?
8. What expenditures will be required in the future for the effective development of public schools?
9. What are some of the fiscal actions required to provide adequate financing for public education?

Information on such questions as the foregoing does not provide easy answers to the problem of what amount should be expended for public education in a particular locality, in a state, or in the nation as a whole. They do constitute one basis for decision in the complex process of budgeting funds for public schools.

Technological Change and Automation

II

Research, the application of new knowledge to industrial processes, and automation are remaking the economy of the United States. The scope and rapidity of this change are bringing about what some have called the Second Industrial Revolution. The impacts of this revolution are profound for education. It is imperative that schools and colleges respond to the new and changing demands being made upon them.

OCCUPATIONAL TRENDS

Professional and Technical Workers

One of the most persistent occupational trends in the United States is the growing demand for workers with increased general education and advanced technical and professional training. A college degree is required even for admission to training for a mounting number of callings.[1] Many business concerns look upon a college degree as the minimum requirement for employment in positions that lead to the more attractive types of work.

The fastest growing occupations are those that require larger amounts of general education and advanced technical and professional training.

---

[1] U.S. Department of Labor, Bureau of Labor Statistics. *Occupational Outlook Handbook.* Washington, D.C.: Government Printing Office, 1961. p. 29.

The 1960 U.S. Census Report states that "professional and technical personnel, the most highly educated of all workers, are increasing fastest." The following are figures for 1950-70:

1950	5 million
1960	7.5 million
1970 (estimated)	10 million

Professional and technical workers in 1950 were 8 percent of the employed population. By 1970, this percentage will be well over 12.5.[2]

Skilled and Semiskilled Workers

Below the professional and technical occupations in amount of training required are those designated as skilled and semiskilled. Both are growing in number, but the skilled occupations are growing more rapidly than the semiskilled.[3]

Unskilled Workers

The percent of the employed population now classified as unskilled will continue to decline.

> The least skilled of all workers do the hardest physical work, except perhaps farm laborers, and are usually the lowest paid. Over the past half century their place in the labor force has dropped from 12.5 per cent to less than 6 per cent in 1960. In numbers, the need for unskilled workers will remain about the same during the coming decade, but their proportion in the labor force will continue to drop—to less than 5 per cent by 1970.[4]

Figure 1 shows the trend for three occupational groups from 1900 to 1960 and estimates the trend to 1975. The group with the highest training (professional and technical workers) composes a rapidly rising percentage of the work force. The per-

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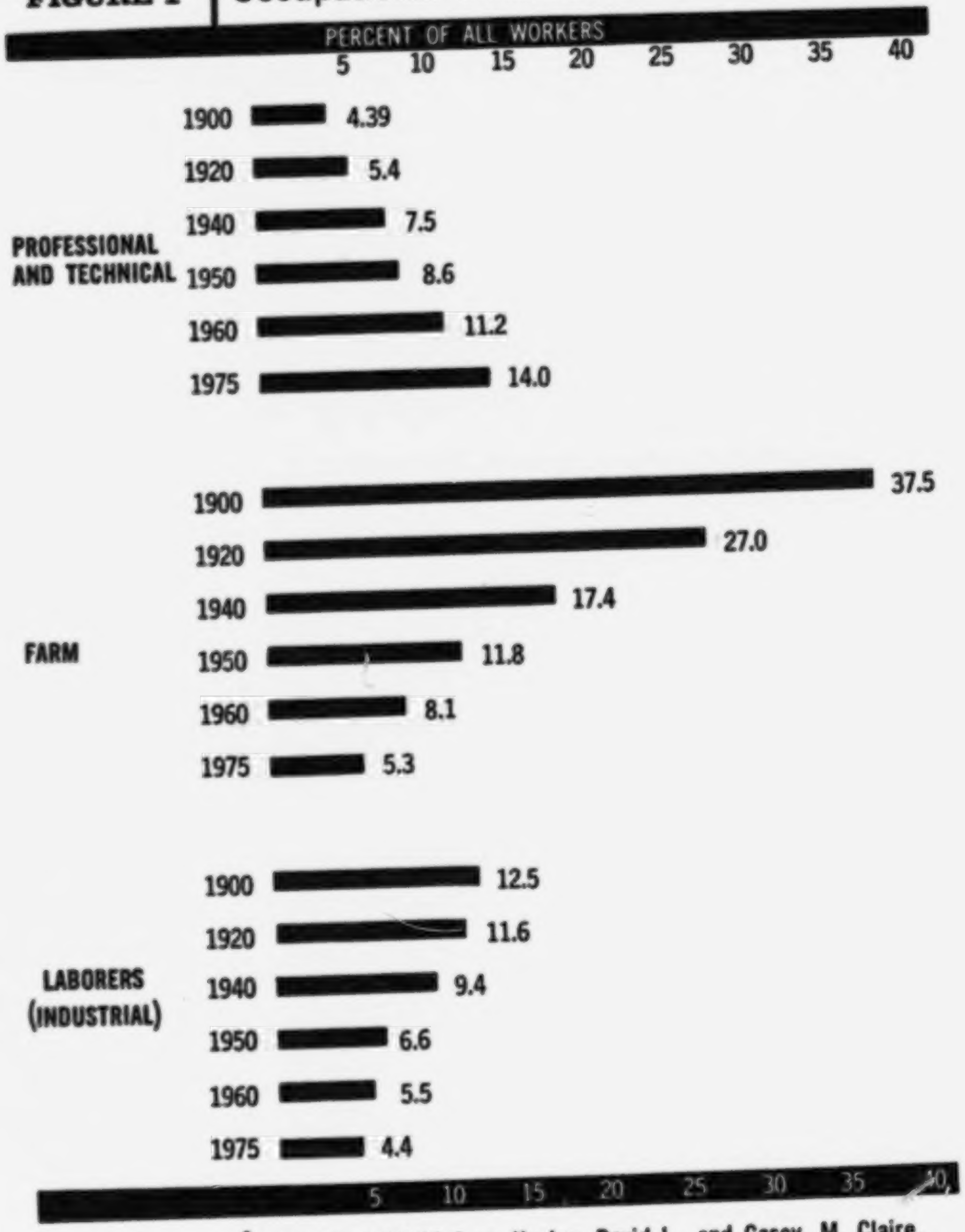
[2] *Ibid.*, p. 24.
[3] *Ibid.*, pp. 22-25.
[4] *Ibid.*, p. 26.

FIGURE 1 Occupational Distribution of Workers



SOURCES Data for 1900-50 from Kaplan, David L., and Casey, M. Claire. **Occupational Trends in the United States, 1900 to 1950.** U.S. Department of Commerce, Bureau of the Census, Working Paper No. 5. Washington, D.C.: Government Printing Office, 1958. Table 2, p. 7. Data for 1960 and 1975 from the U.S. Department of Labor, Bureau of Labor Statistics.

ACTUAL 1900-60 AND ESTIMATED 1975

centages of the work force classified as farm workers and industrial laborers are rapidly declining.

Farm Workers

Farm workers made up 53 percent of the total labor force in 1870; by 1970 they will represent only about 6 percent. The greatest technological revolution in the United States has taken place in agriculture.

In 1870, the number of farmers and farm workers was about 7 million. It reached a peak of 11.5 million around 1910.

> By 1950, the number of farm workers had declined to 7 million (12 per cent of the labor force), the same number as 80 years before, even though the Nation's population had increased almost fourfold and the quantity of farm products by 4.5 times.
>
> This downward trend in the number of farm workers continued during the 1950-60 decade. In 1960, only 5.9 million farmers and farm laborers were in the labor force; by 1970, the total will have dropped still further, to about 5 million, only 6 per cent of the labor force, a ninefold drop in 100 years.[5]

The impact of the reduction in the number of farm workers is far greater in some states than in others. This is how it is in Mississippi:

> The 1960 Census shows that over half the farm population of Mississippi has moved to urban centers in the last 10 years, and also about 75 per cent of the population lives in urban centers, so we need fewer and fewer farmers, and industrialization is demanding more education. To just get out there and plow a mule, you know, like it has been in Mississippi up until a few years ago, could be done without being able to read and write. But, now we have come to the time that something is going to have to be done about this thing because it requires skills and education that haven't been required before. And it is an emergency.[6]

---

[5] *Ibid.*, pp. 16-17.

[6] Williams, W. E., supervisor of adult education, Mississippi State Department of Education. Testimony before U.S. 87th Congress, House of Representatives Committee on Education and Labor, 1962.

Industrial Workers

The following examples are illustrative of the present condition of industrial workers:

> Because of technological change, about 200,000 production jobs have been eliminated in recent years in the aircraft industry alone.
>
> Productivity (or output per man-hour) in the soft coal industry rose 96 per cent since World War II, but employment fell by 262,700.
>
> Steel production in 1960 was almost the same as in 1950, but employment declined by 80,000, or 14 per cent.
>
> Employment in the manufacture of refrigerators and washing machines has fallen 18 per cent, and employment in instrument production has fallen 15 per cent in the last 7 years.[7]
>
> In the highly automated chemical industry, the number of production jobs has fallen 3 per cent since 1956, while output has soared 27 per cent. Though steel capacity has increased 20 per cent since 1955, the number of men needed to operate the industry's plants—even at full capacity—has dropped 17,000. Auto employment slid from a peak of 746,000 in boom 1955 to 614,000 in November 1961.
>
> Since the meat industry's 1956 employment peak, 28,000 workers have lost their jobs, despite a production increase of 3 per cent. Bakery jobs have been in a steady decline from 174,000 in 1954 to 163,000 in 1960.[8]
>
> Employment in railroad jobs fell from a total of 1,400,000 in 1947 to 730,000 in 1961—a drop of 670,000. Technological shifts (the diesel displacement of steam was a large factor) and dwindling business in the postwar period are what worked this occupational upheaval in the Nation's railroads.[9]

---

[7] U.S. 87th Congress, 1st Session, House of Representatives Committee on Education and Labor, Subcommittee on Unemployment and the Impact of Automation. *Impact of Automation on Employment.* Washington, D.C.: Government Printing Office, 1961. 23 pp.

[8] Time. "The Automation Jobless—Not Fired, Just Not Hired." *Time* 77: 69; February 24, 1961.

For further data see U.S. 87th Congress, *op. cit.*

[9] From a study by the U.S. Department of Labor, Bureau of Labor Statistics, October 1962.

CHANGING COMPOSITION OF THE LABOR FORCE

White Collar and Blue Collar Jobs

The growing demand for highly trained and skilled personnel and the declining demand for unskilled workers have brought about a major transition in the composition of the labor force.

> In 1956, for the first time in the Nation's history, professional, managerial, office, and sales workers outnumbered craftsmen, operatives, and laborers. The startling import of this continuing trend can be fully realized only when we remember that in 1910 the number of white-collar jobs was less than half the blue-collar jobs; now they have left the blue-collars behind, and by 1970 they will be 25 per cent greater than blue-collars.[10]

Employment of Women

Another major occupational change concerns the employment of women. It is estimated that during the 1960's the number of women working for salaries and wages will rise at nearly twice the rate for men. By 1970, women workers will number 30 million and will constitute one-third of the labor force. At least two of every five women aged 20-65 will be gainfully employed in 1970.[11]

The growing demand for skilled, semiprofessional, and professional workers can be met in part by capitalizing the potential talents of our woman power. The considerable percentage of women who lack training required for better-paid jobs are the last untapped reservoir of unspecialized brain power.

GAINS AND PROBLEMS OF TECHNOLOGICAL CHANGE

Technological change has brought highly significant gains and has also created serious problems, as illustrated below.

---

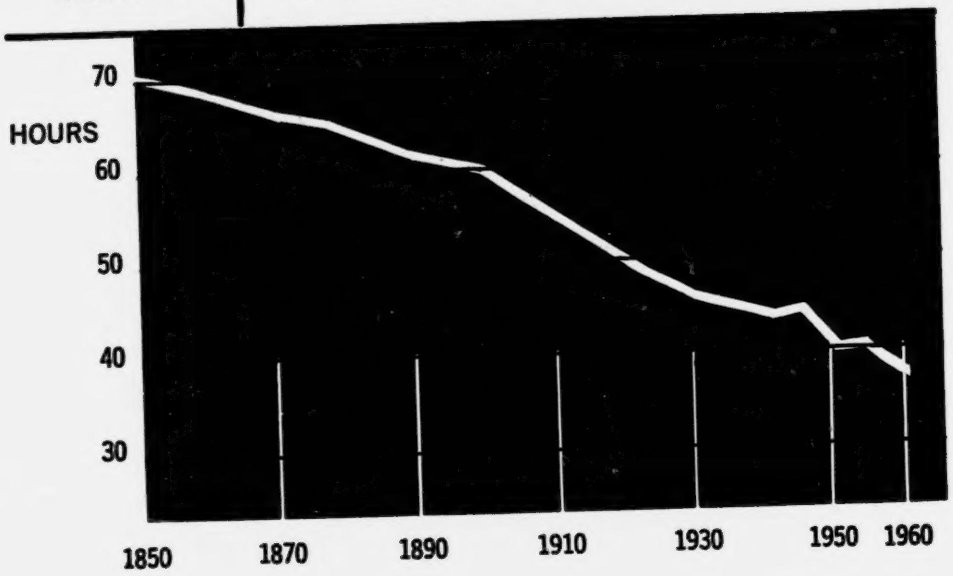
[10] U.S. Department of Labor, *op. cit.*, p. 23.

[11] U.S. Department of Labor. *Manpower Challenge of the 1960's.* Washington, D.C.: Government Printing Office, 1961. p. 7.

Hours and Character of Work

On the gain side is a sharp decline in the number of hours per workweek. The hours in the average workweek declined from 70 in 1850 to 60 in 1900 and to just under 40 in 1960, as shown in Fig. 2.

FIGURE 2 The Average Workweek



SOURCE Twentieth Century Fund.

There has also been a marked change in the nature of work. Fewer and fewer workers are engaged in hard manual labor. Gerard Piel describes this change as follows:

> During the past twenty-five years our technology entered upon the era of automatic production. The real work of extracting nature's bounty from soil and rock and transforming it into goods is no longer done by human muscles, and less and less by human nervous systems. It is done by mechanical energy, by machines under control of artificial nervous systems, by chemicals, and by such subtle arts as applied genetics.

While the impact of these developments upon industry has attracted most of the attention, their impact upon agriculture has amounted to a revolution.[12]

Per Capita Production

The length of the average workweek has sharply declined. Hard manual work is the lot of a decreasing minority of our labor force. Nevertheless, productivity per capita has sharply increased in the United States.

Between 1929 and 1962 our population grew 53 percent, while our gross national product, in constant (1954) dollars, grew 159 percent. The result is the high standard of living of our affluent society and the economic power that is a major deterrent to foreign aggression.

Technology has brought great gains and also has given rise to serious problems. A major problem is the imbalance between the type of labor force our new technology increasingly requires and the skills and qualifications of large numbers of workers in our present labor force. Far too many receive inadequate education and meager training, while the demand grows for broader education and more specialized skills.

School Dropouts and Elderly Workers

A great variety of unskilled jobs, which youngsters formerly filled at least as stepping stones to something better,[13] or which elderly workers filled, are now disappearing. For example, in New York City alone, there are 40,000 fewer elevator operators as a result of the use of automatic elevators. Each year there will be proportionately fewer openings for the unskilled worker.

---

[12] Piel, Gerard. "Can Our Economy Stand Disarmament?" *Atlantic Monthly* 210: 37; September 1962.

[13] President Kennedy, speaking recently on behalf of the Youth Employment Opportunity Bill stated that "we have in this country 1 million boys and girls who are out of school and out of work. In the next eight years of this decade, according to some predictions, we are going to have 8 million boys and girls who are going to leave school before they finish, and they are going to be looking for work. They are going to be unskilled, and they may have trouble finding jobs."

Unfilled New Jobs

At the same time that thousands of jobs are being wiped out, new ones are being created in areas unknown only a few years ago. Many of these jobs are unfilled for lack of qualified workers. It is not that there are not jobs to be filled but that there are not enough people with the training required to fill them.[14]

Costs of Unemployment

These conditions add up to a hard core of unemployed workers. The insidious growth of unemployment is one of the most critical problems confronting our economic system.

Economic losses from unemployment are never regained. The social costs of unemployment are even greater than the economic losses. The discouragement and frustration of able-bodied men and women, eager to work but unable to find employment, cannot be measured in dollars any more than can the distress of their families. Prolonged unemployment contributes to further unemployment, since human capital deteriorates when it is idle. Unemployment impairs the skills that workers have acquired. It also contributes to family disintegration, crime, and other social ills.[15]

The evils of unemployment afflict all age groups in our labor force. Unemployment is especially high among out-of-school teenagers. This is undoubtedly one of the factors responsible for juvenile delinquency. Unemployment among men from age 20 to age 60 or 65 afflicts both the unemployed man and the other members of his family. Many qualified persons aged 60 and older are ready and able to work, but are denied employment.

PROPOSED CURES FOR UNEMPLOYMENT

There appears to be general agreement that a greatly expanded program for training and retraining the work force is essential if unemployment is to be lessened. There is disagreement about whether such a program is enough. William Glazier states that there is a persistent hard core of unemployed workers, which grew from fewer than 500,000 persons in 1953 to about 2 million at the beginning of 1960. He writes:

---

[14] Buckingham, Walter. *The Impending Educational Revolution*. Occasional Paper No. 1. Washington, D.C.: Project on the Educational Implications of Automation, National Education Association, 1961. p. 3.

[15] U.S. 87th Congress, *op. cit.*, p. 14.

> The number has continued to grow. Technological change, decline in some industries and growth in others, shifts in the geographical locations of plants, and changes in consumer demand have caused these many millions of workers to be unemployed and have kept them that way. They are the victims of growth and progress in the American economy.
>
> The consequential shifts in the structure of industry have left behind a growing pool of unskilled and semiskilled workers handicapped by the limits of a grade school education, equipped with years of routine production-work experience, and burdened with families to support. Many are members of minority groups. In addition, there are the young people, under twenty-two years of age, who have the highest unemployment rate of any group in the nation today; half of them have still to get their first jobs. They are largely untrained for employment.
>
> The paradox . . . is that all over the nation jobs go unfilled. . . . There seems to be no lack of people on the one hand or unfilled jobs on the other; what appears to be lacking is people with sufficient training and the right skills. The jobless worker, in the wrong place with the wrong skills and aptitudes, has become the fall guy. . . .
>
> As a social objective, training or retraining employed and unemployed persons is much to be desired. It would improve the employability of workers, open up more attractive and higher-paid job opportunities, and raise the productive level of the entire nation. The debatable issue is the appropriateness of retraining as a remedy for the current chronic unemployment.[16]

Positive Measures

Various measures have been suggested so that automation can increase productivity without creating serious unemployment. Some would slow down the pace of automation to a rate that would decrease the amount of labor displacement and joblessness. In some industries, featherbedding is defended as preferable to unemployment.

---

[16] Glazier, William. "Automation and Joblessness." *Atlantic Monthly* 210: 44-45; August 1962.

There is disagreement about how far retraining of those dispossessed of their jobs can be accepted as a solution for technological unemployment.

Regardless of one's point of view on these problems, modern technology and automation are here to stay. They are a stepped-up stage of the industrial revolution through which the output from an hour of labor has constantly been increased. If the United States should attempt to turn back or to stop the clock in this regard, it would lose its paramount economic position in today's competitive world.

The problem is not a new one. At a faster pace than in the past, we must discover the means whereby the rising productivity and standard of living, which are the fruits of technological progress, may be enjoyed without suffering the evil of unemployment and the ills that it breeds.[17]

Governmental Action

Various types of governmental action to alleviate unemployment are being considered, and some are being put into effect. Among the steps that have been suggested for government to take in dealing with chronic unemployment are these:

1. Objective and thorough study to determine the extent, location, and underlying causes of chronic unemployment
2. Strengthened programs of vocational and technical training to help the untrained become proficient and to retrain those whose original skills are no longer needed
3. Better information about employment opportunities in other areas of a given state or elsewhere in the country
4. Industrial development programs on local and regional bases.

---

[17] See the following collection of 20 articles reprinted from *Monthly Labor Review:* U.S. Department of Labor, Bureau of Labor Statistics. *Impact of Automation.* Bulletin No. 1287. Washington, D.C.: Government Printing Office, 1960. 114 pp.

The first large-scale effort of the federal government to meet the problems posed by automation and unemployment is the $430 million Manpower Development and Training Bill which became a law on March 15, 1962. It authorized $100 million in federal funds for the fiscal year beginning July 1, 1962, and $165 million in each of the two succeeding years, with states matching the federal funds in the third year. More than 1 million persons are expected to benefit during the three-year program. Priority is to go to unemployed persons and to farm families having net incomes of less than $1,200 per year.[18]

It is outside the scope of this report to appraise the many proposals that have been made and the actions that are being taken to alleviate unemployment. The important fact is that there is general agreement that education has a major role to play in working toward this end.

MODERN ECONOMY

Ours is an economy that would be unable to operate without a growing percentage of educated workers. Schools, colleges, and graduate schools, by responding to the demands for an ever more highly educated labor force, make a major and indispensable contribution to economic growth.

This, to be sure, is only one of the purposes of education, but it is an important one. *Occupational Outlook Handbook* states the situation as follows:

> The nature of one's job determines in large measure the nature of one's life. Young people who have acquired a skill or a good basic education will have a better chance at interesting work, good wages, steady employment, and greater satisfaction in life in general. Getting as much education and training as one's ability and circumstances permit should, therefore, be high on the list of things to be done by today's youth.[19]

---

[18] NEA Journal. "News and Trends." *NEA Journal* 15: 4; April 1962.

[19] U.S. Department of Labor, *Occupational Outlook Handbook*, p. 28.

Current conditions indicate that the educated are most in demand and least likely to be unemployed in periods of either high or low economic activity. Under present trends, there appears to be little danger of "overeducating" our population, especially if effective guidance results in as close a matching as foresight will permit of the number trained and the number needed in each field.

One answer to the obsolescence of skills caused by technological change is re-education and retraining of displaced workers.

Youths out of school and out of work present a different problem. The need is for cooperative work-training programs between schools and industry, which postpone the entry of these youths into the labor market until they are equipped with marketable skills.

Report of the Twenty-First American Assembly

The final report of the Twenty-First American Assembly on Automation and Technological Change states that to prepare our labor force for the needs of the new technology, we must further improve our educational standards generally and—

1. Increase substantially the number of scientists, engineers, teachers, doctors, and others in the professions.
2. Develop management personnel equipped with the background needed to understand the social and economic consequences of the new technology and with the capacity to adapt technology to the achievement of greater productivity.
3. Expand training programs for technicians and assistants to engineers, scientists, and other professional personnel.
4. Upgrade and modernize the skills of craftsmen and other workers.
5. Improve the quality of the elementary and secondary educational systems, giving particular attention to the basic skills of reading and mathematics, which provide the foundation for all later education and training, and increase the productivity of our education through new techniques.[20]

---

[20] Reported in *Congressional Record,* June 6, 1962.

Range of New Demands

The following points from several sources suggest new demands which schools and colleges must meet:

1. The work force must be both broadly educated as citizens and highly trained as workers if they are to comprehend and adjust to current and future technological change. People must learn to face the necessity for geographical and occupational transfers; low levels of education and training limit mobility and increase insecurity.

2. An adequate supply of professional and technical people must be trained to meet the growing needs. In recent years practically every field has been hampered by a shortage of scientists and engineers, of managers and competent administrators, of trained researchers, teachers, skilled craftsmen, and technicians.[21]

3. Vocational education must be geared to visible and continuing changes. Vocational education has been slow in adapting to changing needs, operating too much within the boundaries of concepts formulated around the time of World War I.

4. There should be much more careful planning of women's education to take account of the thousands who enter upon lifelong careers and the rising proportion of women who enter gainful employment before marriage and again after their children are in school or are past school age. To permit more and more women to enter the labor market without adequate training would be disadvantageous to them and to the economy.

5. How leisure time is used will determine whether technological progress and the shorter workday and week serve cultural, moral, and spiritual values as well as material ends. This calls for greater emphasis on education aimed at wise use of leisure time.

6. More adequate educational and vocational guidance must be offered part-time and full-time junior and senior high-

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[21] Cassell, Frank H. "Changing Manpower Needs." *NEA Journal* 51: 55; April 1962.

school students and community college, junior college, and four-year college students.

7. Education must be a lifelong process. Lifelong learning is a new imperative. To survive as productive members of our society and even to enjoy the opportunities offered by the promise of additional leisure will require additional knowledge and lifelong learning.

"It should be made clear to every worker in the land that the price of holding a job will increasingly depend on continuing education throughout the entire working life of the individual." [22]

How to deal with technological unemployment is a controversial issue. It is clear, however, that there is need for a labor force with constantly rising levels of general education and occupational training.

Schools will be involved in varying degrees in dealing with technological unemployment. In some cases, such as the elimination of illiteracy, the primary responsibility will rest on a system of public education that makes it impossible for a normal child to reach maturity lacking the ability to read and write. On the other hand, the retraining of adult workers, unemployed because of automation and other factors beyond the control of the individual, will require the involvement of schools to a lesser extent. Doubtless this retraining will require the cooperation of management and labor, certain types of governmental action, and understanding on the part of the community as a whole. Such cooperative action will not be easy to accomplish. But to permit the full impact of automation and other elements in the technological revolution to fall upon the individual worker without appropriate response would be folly with the gravest social consequences.

FISCAL IMPLICATIONS

Substantial increases will be required in the financial support of education if it is to play its role in meeting our economy's rising demand for workers with more and better education and training and its role in providing certain types of education to reduce unemployment resulting from automation and technological change.

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[22] Clark, Harold. "Education in Our Complex Society." *NEA Journal* 51: 52; April 1962.

Whether this additional cost can and will be met will to a considerable degree depend upon the public's conception of the economic significance of education. The next sections of this report bear on this question.

Education and Earnings

III

The correlation between amount of education and average earnings of individuals has caught the interest of economists. Leaving aside for the moment the issue of whether there is causal relationship between the two, and recognizing the complexity of the factors involved, let us look at the facts.

EDUCATION AND AVERAGE ANNUAL EARNINGS

Studies as early as 1917 and many dated subsequently have shown that "persons with larger amounts of schooling generally have larger earnings." [1]

The most recent comprehensive figures on this relationship are those of Miller.[2] His findings show that in 1958 average earnings for males 25 years of age and over, associated with varying years of schooling, were as follows:

Less than eight years	$2,551
Eight years	3,769
High school, one to three years	4,618

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[1] Norton, John K. *Education and Economic Well-Being in American Democracy*. Washington, D.C.: Educational Policies Commission, National Education Association, 1940. pp. 115-21.

[2] Miller, Herman P. "Annual and Lifetime Income in Relation to Education." *American Economic Review* 50: 5; December 1960.

High school, four years	5,567
College, one to three years	6,966
College, four years and more	9,206

Miller notes the regularity which marks the correlation between education and higher earnings. He finds—

> that in every year for which data are presented, the completion of an additional level of schooling was associated with higher average incomes for men. This finding parallels that obtained in numerous other studies of the relationship between education and income dating back to the early part of this century. Although the income levels have changed considerably during the past 20 years, the basic relationship between the extent of schooling and income appears to have remained the same.[3]

EDUCATION AND LIFETIME EARNINGS

Estimates of lifetime incomes, related to amount of education, are more significant than those for one year. Miller's study by complex computations produces "derived figures" for lifetime earnings from age 18 to death of individuals in the United States in different educational groups. Figure 3 is based on calculations from Miller's study. Miller, commenting on his estimates, states:

> Additional schooling is associated with a very substantial increase in lifetime income. On the basis of conditions in 1958, an elementary school graduate could expect to receive during his lifetime about $52,000 (or two-fifths) more income, on the average, than the person who had no schooling or who terminated his formal education before completing the eighth grade. The difference between the expected lifetime income of the average elementary school and high school graduate was equally striking. In 1958, the average elementary school graduate could expect a lifetime income of about $182,000, as compared to about $258,000 for the average high school graduate. The expected income differential associated with the four years of high school education therefore amounts to about $76,000, or 42 per cent.[4]

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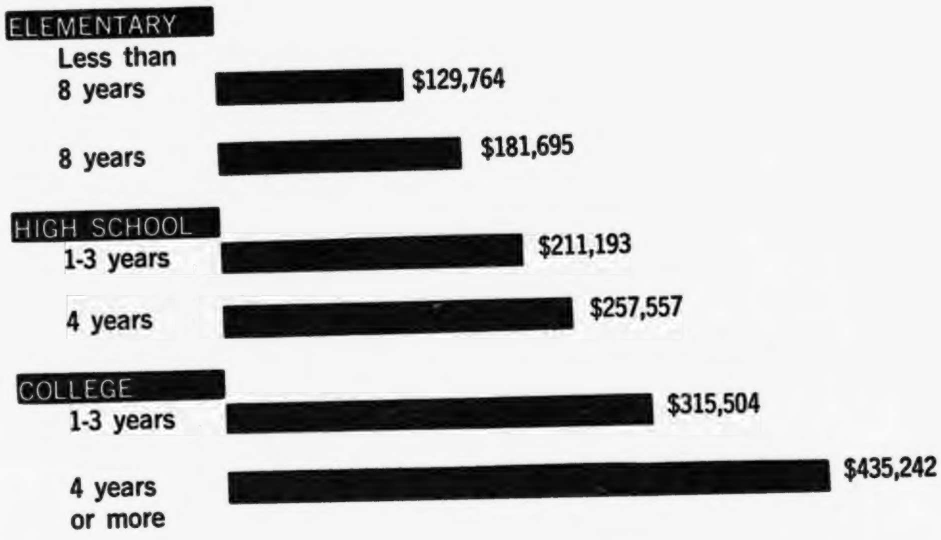
[3] *Ibid.*, p. 4.
[4] *Ibid.*, p. 22.

FIGURE 3 Estimated Earnings from Age 18 to Death and Years of Schooling Completed



NOTE The above data are based on arithmetic mean for males, 1958.

SOURCE Miller, Herman P. "Annual and Lifetime Income in Relation to Education." **American Economic Review** 50: 21; December 1960.

Miller points out that many complex factors, other than education, are associated with the higher lifetime earnings of those with higher levels of education. For example, "Since a college degree is the 'open sesame' to many, if not most, high-paying jobs, it should come as no surprise that the greatest income gains associated with additional schooling appear at the college level."[5] Miller claims no direct causal relation between lifetime incomes and education. The conclusions of his study are these:

> This study largely represents an attempt to ascertain if the marked increase in the number and proportion of high school

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[5] *Ibid.*

> and college graduates during the past generation has been associated with a reduction in income differentials for these groups. . . .
>
> The figures show that despite large relative reductions in the supply of workers whose schooling did not extend beyond the eighth grade, this group had smaller relative income gains than high school graduates. On the other hand, the large relative increase in the supply of college-trained workers did not adversely affect their relative income position. On this basis it is concluded that the demand for more highly educated workers has kept pace with the increased supply of such workers, and, as a result, their relative income position has not changed. The fact that the proportion of men employed in professional and managerial work—the two major outlets for college-trained men—increased by 50 per cent during the past generation suggests that industry has absorbed the increased flow of graduates from our universities.[6]

DEMAND FOR EDUCATED PERSONNEL

Some economists have argued that differentials in earnings associated with different amounts of education eventually will be reduced. It has been predicted that persistent increases in the supply of college-trained students will so flood the market that many of them will eventually be doomed to economic disappointment after graduation. No such trend is discernible in the period since 1939.

It is doubtless true that a prolonged economic depression would result in an oversupply of college graduates. There was an oversupply of nearly all classes of workers in the 1930's, but unemployment was less among trained than unskilled workers. The unskilled are the first to be laid off and last to be employed.

If one assumes prolonged depressions, when the economy comes near to dead center, there will be periods of unemployment and lowered earnings by persons with all levels of education. If one assumes economic activity even as vigorous as that of the United States since World War II, then there is an increasing demand for highly trained persons and a declining demand for the unskilled.

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[6] *Ibid.*, p. 24.

A substantial stepping-up of economic activity immediately requires more trained workers. During World War II, there was a serious shortage of workers in many occupations. Many public and private vocational schools ran two and sometimes three shifts and trained 13 million workers in response to the needs of the war period.

Today, there is a continuing shortage of many types of highly educated personnel. For example, the federal government finds it extremely difficult to fill civilian posts calling for highly trained persons.

The military demands an increasing percent of trained personnel. Most rejections for military service are among those with little schooling. Once, a young man was urged to "join the Navy and see the world." Now, he is urged to join the Armed Forces to obtain training and education available in hundreds of fields, provided directly by the military or in cooperation with educational institutions.

It is possible that agreement for substantial reduction of armaments would result in temporary oversupply of professional, technical, and skilled workers. Such a situation would require vigorous action in order to absorb this personnel in production for consumption rather than production for military preparedness.[7] However, dire predictions of unemployment and economic depression to follow the end of World War II were not fulfilled.

Under present trends, there appears to be little danger of overeducating our population, especially if effective guidance results in as close a matching as foresight will permit of the number trained and the number needed in each field.

CONCLUSIONS

It can be concluded from the facts to date that persons with larger amounts of education earn larger incomes. Even though the general level of schooling has continued to rise during the past generation, the substantial differentials between the earnings of those with less schooling and those with more schooling, at both the high school and the college levels, have continued to hold. The demand for highly trained technical and professional personnel continues to grow.

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[7] Piel, Gerard. "Can Our Economy Stand Disarmament?" *Atlantic Monthly* 210: 35-40; September 1962.

Just how much the higher earnings of those with more schooling are due solely to their larger amounts of education has yet to be determined. A number of economists are seeking objective answers to this question. They are also exploring the relation of the development of human capital to economic growth. The next section reviews their findings on this important question.

Education and Economics

IV

Adam Smith recognized that publicly supported education played a role in individual self-improvement and in wealth creation.[1] Other great economists, such as Ricardo, Mill, Marshall, and many more, gave attention to the economic value of education.[2] However, until recently, the consideration of the economic significance of education by economists has been incidental to their absorption in the roles of land, labor, and physical capital in achieving economic output.

EDUCATION AND ECONOMIC GROWTH

Since World War II, economists have been giving increasing attention to factors involved in economic growth. This results from several developments, such as efforts to step up economic productivity in underdeveloped nations and to speed up the rate of economic growth in the United States—the latter having recently proceeded at a slower rate than that in a number of Western European countries and in the USSR.

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[1] Vaizey, John. *The Economics of Education.* New York: Free Press of Glencoe, 1962. Chapter 1, "What Economists Said About Education," pp. 15-25.

[2] Swearingen, Eugene L. "Education as an Investment." *Financing the Changing School Program.* (Compiled by National Education Association, Committee on Educational Finance.) Washington, D.C.: the Association, 1962. pp. 20-37.

Economists are developing scientific research techniques for measuring interrelations of education and economic growth. They have only begun studies that will permit exact estimates of the economic returns from investment in education.[3] The technics for studying the economic significance of investment in human beings are extremely complex.[4]

Although the fact of correlation between amount of education and individual earnings is generally recognized, it is extremely difficult to determine just how much the greater amount of education is responsible for higher earnings. Some cynically claim that "it's not what you know but who you know" that determines a person's success. Many factors are involved—native ability and drive, connections, and the degree to which an occupation is unionized, to name a few.[5]

Attempts are being made to measure both the direct economic returns on investments in education to the individual and the indirect returns from investment in education to the national economy. Studies of the former type will be reviewed first.

RETURNS TO THE INDIVIDUAL

What is the rate of return to the individual solely from investment in education? One effort to answer this complex question was made by Gary S. Becker for the National Bureau of Economic Research. His study, still under way, has yielded preliminary findings. It compares the life earnings of college graduates with those of persons of less education and relates the differential to the educational investment of these people. The difference in earnings of urban white males as a return from investment in college education was found to be, after taxes, about 12.5 percent in 1940 and about 10 percent in 1950. Another calculation, with allowance for the public's outlay, before taxes, arrives at 9 percent. Becker also estimates returns on investment in private business and investment in college education and concludes they are not far apart.[6]

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[3] Renshaw, Edward F. "Estimating the Returns to Education." *Review of Economics and Statistics* 42: 318-24; August 1960.

[4] Journal of Political Economy, Vol. 70, Supplement No. 5, Part II. Chicago: University of Chicago Press, October 1962. Copyright 1962 by the University of Chicago Press.

[5] Harris, Seymour E. *More Resources for Education.* New York: Harper & Row, 1960. pp. 71-72.

Vaizey summarizes the findings of Becker as follows:

> Becker calculated that for white urban males with high school education the return on educational costs, including income foregone, was 14.3 per cent in 1939, and 19.2 per cent after adjusting the income data for mortality and unemployment. For college education, from 1940 to 1955, adjusted for race, ability, unemployment and mortality, the return was 12.5 per cent before tax.[7]

Another economist, Sidney C. Sufrin, draws the following conclusion from Becker's study:

> In short, Becker finds that without regard to other than economic values, e.g., personal satisfactions and enjoyments deriving from college education, and without the consideration of indirect economic effects, e.g., technological improvements made possible by a more skilled and knowledgeable fraction of the population, college education payoff about equals business investment payoff.[8]

In addition to the direct cash value of an education to the individual, there are indirect or diffused economic returns associated with investment in education that are largely left out of consideration when only returns from individual investment in education are considered. As Groves states:

> Studies which start with the individual and the impetus which education gives to his earning power ignore entirely the effect which his education may have on everybody's earning power.[9]

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[6] Becker, Gary S. "Underinvestment in College Education." *American Economic Review* 50: 346-54; May 1960.

[7] Vaizey, *op. cit.*, p. 43.

[8] Sufrin, Sidney C. *Issues in Federal Aid to Education.* Syracuse, N.Y.: Syracuse University Press, 1962. p. 29.

[9] Groves, Harold M. *Education and Economic Growth.* Washington, D.C.: Committee on Educational Finance, National Education Association, 1961. p. 36.

Let us next consider efforts to estimate the effect that education has on everybody's earning power, that is, economic production and growth.

ECONOMIC INPUT AND OUTPUT

The growth in gross national product of the United States has not been at a rate as rapid as that of some European countries since World War II. However, it has been substantial in amount, and this growth has been on a higher economic base than that of Europe.

Gross national product in the United States rose from $285 billion in 1950 to $519 billion in 1961, and to $552 billion in the second quarter of 1962. In constant figures, in 1954 dollars, the rise in billions was from $318 in 1950 to $448 in 1961, and to $471 in the second quarter of 1962.[10]

Economists have had some difficulty in accounting for rises in production in the United States on the basis of traditional economic calculations as to inputs of labor and physical capital.

Apparently, the inputs of labor and capital are considerably less than the outputs realized. The amount of this difference is beginning to attract the attention of economists who are studying quantitative and qualitative factors affecting the growth of the economy of the United States. Some conclusions are becoming available.[11]

A study by the National Bureau of Economic Research found that between 1889 and 1957 the combined input index increased at an average rate of 1.9 percent per year, and the output index increased about 3.5 percent per year, leaving a "residual" increase of about 1.6 percent per year.[12]

While, according to economists, economic inputs need not necessarily equal outputs, the wide differences between the two as estimated above call for explanation.

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[10] Board of Governors of Federal Reserve System. *Federal Reserve Bulletin.* Washington, D.C.: Government Printing Office, September 1962. p. 1230.

[11] Abramovitz, Moses. *Resource and Output Trends in the United States Since 1870.* Occasional Paper No. 52. New York: National Bureau of Economic Research, 1956. 23 pp.

[12] Kendrick, John W. *Productivity Trends in the United States.* Princeton, N.J.: Princeton University Press, 1961. p. 79. Copyright 1961 by Princeton University Press.

"HUMAN CAPITAL"

Theodore W. Schultz, former head of the Department of Economics of the University of Chicago, was one of the first to become interested in the wide differences between economic inputs and outputs. In his presidential address at the 1960 meeting of the American Economic Association, Schultz stated:

> Although it is obvious that people acquire useful skills and knowledge, it is not obvious that these skills and knowledge are a form of capital, that this capital is in substantial part a product of deliberate investment, that it has grown in Western societies at a much faster rate than conventional (nonhuman) capital, and that its growth may well be the most distinctive feature of the economic system. It has been widely observed that increases in national output have been large compared with increases of land, man-hours, and physical reproducible capital. Investment in human capital is probably the major explanation for this difference.[13]

Schultz's analysis explores "why economists have shied away from explicit analysis of investment in human capital" and concludes that this explains "many a puzzle about economic growth."[14] He then states:

> The failure to treat human resources explicitly as a form of capital fostered the retention of the classical notion of labor as a capacity to do manual work requiring little knowledge and skill, a capacity with which, according to this notion, laborers are endowed about equally. This notion of labor was wrong in the classical period and it is patently wrong now. Counting individuals who can and want to work and treating such a count as a measure of the quantity of an economic factor is no more meaningful than it would be to count the number of all manner of machines to determine their economic importance either as a stock of capital, or as a flow of production services.[15]

Later in his address, Schultz states that "investment in education . . . may well account for a substantial part of the otherwise unexplained rise in earnings." [16] On the basis of estimates that he offers, he concludes:

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[13] Schultz, Theodore W. "Investment in Human Capital." *American Economic Review* 51: 1; March 1961.

[14] *Ibid.*, p. 1.

[15] *Ibid.*, p. 3.

> On one set of assumptions, the unexplained part amounts to nearly three-fifths of the total increase between 1929 and 1956. How much of this unexplained increase in income represents a return to education in the labor force? A lower limit suggests that about three-tenths of it, and an upper limit does not rule out that more than one-half of it, came from this source. These estimates also imply that between 36 and 70 per cent of the hitherto unexplained rise in the earnings of labor is explained by returns to the additional education of workers.[17]

Schultz gives this general conclusion: "Truly, the most distinctive feature of our economic system is the growth in human capital. Without it there would be only hard, manual work and poverty, except for those who have income from property." [18] He recognizes many complexities in arriving at scientific measures of the returns to an economy from investment in education. He also points out that, in improving our human capital, services other than education, such as those in the field of health, contribute to the stock of human capital.

Schultz suggests some tentative implications for social policy that arise from growing insight into the importance of investment in human capital. These include—

1. Removal of such hindrances to free choice of professions as racial and religious discrimination.

2. Long-term loans to students.

3. Larger investments in the health and education of disadvantaged Americans.

4. Retraining of workers displaced by technological changes.

5. Encouragement of able youths to invest in themselves, especially through higher education.

Among appraisals of recent studies of the economic importance of investment in education is that of Swearingen, dean of the College of Business of Oklahoma State University. He offers the following review:

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[16] *Ibid.*, p. 10.
[17] *Ibid.*, p. 13.
[18] *Ibid.*, p. 16.

> Many studies . . . show that the return on the investment in education pays *economic* dividends of approximately 10 percent with none of the costs allocated to consumption and with no consideration given to the cultural, political, and social benefits of education.
>
> These studies, in my opinion, grossly underestimate the value to society of education. They place a value on only those qualities which affect the lifetime earnings of the individual. They overlook many factors which I believe to be very important. Just to list a few, what is the value to society of having: educated civic workers, educated mothers, educated neighbors, improved race relations (which seems to be related closely to education), reduction of poverty with consequent reduction in crime, mothers with some leisure time while their children are in school, the satisfaction which comes from developing one's talents during the educational process, an educated citizenry in the event of war, a citizenry that is literate, and a higher rate of economic growth for our society? [19]
>
> Note that any study which begins as an attempt to measure only those aspects of education which result in changes in the income of the individual will of necessity omit all of the foregoing benefits of education and many more. Nevertheless, even the studies which have focused only on the increased life earnings of the individual compared to the costs of education (both properly discounted) have shown that the return on the investment in education (human capital) is equal to or greater than the return on investment in physical capital.[20]

Although not exact in the scientific sense, there is empirical evidence concerning the returns from investment in education. Two areas of observation are considered in the next sections of this report—the growth in productivity of agriculture in the United States and the experience of nations, both those that are underdeveloped and those that are economically mature.

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[19] Swearingen, Eugene L. "Education as an Investment." *Financing the Changing School Program.* Washington, D.C.: Committee on Educational Finance, National Education Association, 1962. pp. 34-35.

[20] *Ibid.*, p. 35.

Education and Agricultural Productivity

V

The story of agricultural production in the United States is an amazing one. Agriculture has been the pacesetter in productivity. The embarrassment of overproduction in the United States contrasts dramatically with the lack of sufficient food in many parts of the world.

REVOLUTION ON THE FARM

The greatest technological revolution in the United States has taken place on the farm. Along with remarkable gains in agricultural production have come such woes as what to do with our agricultural surplus and what to do with the rapidly displaced farm laborers who constitute a considerable part of the disadvantaged citizens in city slums.

> In 1870, more than half of the Nation's workers were engaged in agriculture. Today, only 1 worker in 12 makes his living from farming, either as a farm owner or as a laborer. The implications of this fact are enormous. Ninety years ago, the average farmer could supply food for only 6 people; in 1960, 1 farmer met the food needs of 26 people.[1]

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[1] U.S. Department of Labor, Bureau of Labor Statistics. *Occupational Outlook Handbook*. Washington, D.C.: Government Printing Office, 1961. p. 16.

Farm output, as measured against man-hours, increased 80 percent from 1948 to 1958. The annual cumulative rate of increase in productivity of agriculture was 6 percent as compared with 2.5 percent in the nonfarm sector.[2]

Such gains with continuing decreases in farm labor and acres cultivated are a remarkable economic achievement. Many factors have entered into it—new types of organization and machinery and, certainly, education.

In agriculture, there is probably the most comprehensive use of education found in any sector of the economy. Let us analyze some of the educational factors in the picture.

LITERACY AND GENERAL EDUCATION

Although schools in rural regions lagged behind those in urban areas,[3] the typical U.S. farmer achieved literacy and some general education in the first half of the nineteenth century as a result of the battle fought and won in that period for free elementary education.

EDUCATION AND AGRICULTURAL RESEARCH

In 1862, President Lincoln signed the Morrill Act providing for the establishment of institutions of higher education in all states, concerned with, but not limited to, the study of agricultural and mechanical arts.

These institutions had relatively little of a scientific nature to teach about agriculture. To remedy this situation, experimentation and research in agriculture were provided for by the Hatch Act of 1887. In 1914, provision was made for adult education, first in agriculture and home economics and later in other fields, under the Smith-Lever Act. The Smith-Hughes

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[2] Groves, Harold M. *Education and Economic Growth.* Washington, D.C.: Committee on Educational Finance, National Education Association, 1961. p. 19.

[3] This lag is one source of some of the most severe social problems associated with illiteracy, unemployment, and crime, dealt with earlier in this report.

Act of 1917 provided, for high schools, vocational education in agriculture, trades and industries, and home economics.[4]

EDUCATION AND AGRICULTURAL PRODUCTIVITY

In the foregoing legislation and subsequent acts extending education in these fields, one finds one of the most comprehensive programs for investment in human capital that history records. The farmers of the United States compose no ignorant or superstitious peasantry. For a century or more, they have enjoyed the benefits of—

1. Literacy and general education permitting access to written knowledge and the flexibility of mind which tends to welcome new knowledge.
2. Formal and specialized instruction beginning at the secondary level and continuing into the undergraduate and graduate levels of higher education.
3. Research and experimentation to provide a scientific basis for instruction and practice.
4. Provision for the rapid extension of new knowledge among those engaged in the industry.

Some economists have suggested that the reason that other major sectors of the economy have gained less rapidly in productivity than agriculture is that they have made less intensive use of the quartet of factors identified above.

ACTION FOR AGRICULTURE?

We might wish that our agricultural revolution had been wholly a matter of intelligent leadership and statesmanship. It appears, however, that it was largely the outcome of two factors: (1) war pressures (during which the Morrill Act of

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[4] Norton, John K. "Federal Relations to Education." *Encyclopedia of Educational Research*. (Edited by Chester W. Harris.) Third edition. New York: Macmillan Co., 1960. pp. 522-23.

1862 and the Vocational Education Act of 1917 were passed) and (2) certain rural political controls. Referring to the tremendous increases in agricultural production, Groves states:

> A plausible hypothesis is that here we had a politically favored area upon which were bestowed almost unlimited funds, both for research and dissemination of the results.[5]

One might wish that fortuitous circumstances had brought about equally effective use of education in the nation's total development—economic and otherwise. Rather, several interests have blocked full use of the power of education in advancing the general cultural and economic growth of the United States.

The unfinished business in the agricultural sector is the rational action that its most rapid and most complete technological revolution demands. There must be use of, or limitation of, agricultural production and provisions for displaced workers.

Another type of empirical evidence bearing on the education-economic relationship comes from the correlation of investment in education and per capita production both in underdeveloped and in economically mature nations. The next section reviews evidence on this subject.

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[5] Groves, *op. cit.*, p. 20.

Education in the World Scene

VI

The relation of education to economic growth is a matter of world-wide inquiry. It is of keen concern to the nations struggling to feed their hungry populations. The economically advanced nations are studying the role of education as a factor in stepping up the rate of economic growth. Some interesting facts are emerging.

LITERACY AND PER CAPITA INCOME

There is high correlation in the nations of the world between literacy and economic productivity. One can approximately estimate the per capita income of a nation by ascertaining the percentage of its population that is literate.

John Kenneth Galbraith, U.S. Ambassador to India, has pointed out that popular enlightenment opens men's minds to new methods, new techniques, and new desires.

> Apart from its cultural role, popular literacy is a highly efficient thing. Needless to say, it is also the mainspring of popular aspiration. As such it adds strongly to the desire for development.[1]

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[1] Galbraith, John Kenneth. *Economic Development in Perspective.* Cambridge, Mass.: Harvard University Press, 1962. p. 13.

To be sure, literacy is only one element in economic growth. But it is significant that no nation with an illiterate population has achieved high productivity. All nations with literate populations have high per capita incomes.

NATURAL RESOURCES, EDUCATION, AND PRODUCTIVITY

The natural resources of a nation do not determine its economic status. Table I shows that some nations rich in natural resources are poverty stricken. Others, such as Denmark and Switzerland, have meager natural resources but high per capita incomes. Both of these latter countries have made highly effective use of education.

EDUCATION AND ECONOMIC GROWTH

Western Nations

How much is the superior economic status of Western nations due to provision for the education of their people? Was industrialization achieved first, and did it make it possible to finance education, or was the sequence reversed?

Mrs. Alva Myrdal, Swedish Ambassador to India, in 1960 reported her observations of the relation of education to economic growth in several nations of the West, including Denmark, Sweden, Germany, France, Great Britain, and the United States. In dealing with the relation of education to economic growth, she stated that "education has, in the nations that have advanced rapidly and firmly, been rather a precursor than a follower in the table of progress."

She gave particular attention to Denmark, since it has few natural resources besides its land and its people. She pointed out that—

> the industrial revolution in Danish agriculture could only have been attained because the Danish population was already rather thoroughly prepared by education. . . . No other country had so early and so comprehensively instituted compulsory schooling as Denmark. Thus, when the great decision had to be taken about changing the nation's economy, the

TABLE I Natural Resources, Education, and Income

NATION 1	NATURAL RESOURCES 2	EDUCATIONAL DEVELOPMENT 3	PER CAPITA INCOME, AVER. 1952-54 4
Brazil	high	low	$ 230
Colombia	high	low	250
Denmark	low	high	750
Mexico	high	low	220
New Zealand	high	high	1,000
Switzerland	low	high	1,010
United States	high	high	1,870

SOURCES For per capita income (net national product at factor cost): National Industrial Conference Board. **The Economic Almanac, 1958.** New York: Thomas Y. Crowell Co., 1958. p. 488.
For educational development: National Education Association, American Association of School Administrators. **Schools for a New World.** Twenty-Fifth Yearbook. Washington, D.C.: National Education Association, 1947. pp. 26-30.

challenge could be met by a people who had already behind it a generation of practically universal literacy.[2]

The quick recovery of the nations of Western Europe after World War II is in sharp contrast to the lagging economic progress of the less-developed countries. The former nations had a large stock of human capital in the form of educated and trained citizens as an important factor in speeding their recovery. Looking to the future, the Western nations are taking realistic account of the role of education as a means to further developing their manpower.[3]

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[2] Norton, John K. "Education and Economic Development." *Indian Journal of Educational Administration and Research* 1: 13; Spring 1961.

[3] Vaizey, John. *The Economics of Education.* New York: Free Press of Glencoe, 1962. Chapter 7, "Manpower," pp. 89-107.

The recent Policy Conference on Economic Growth and Investment in Education identified a number of the products of education that are essential for economic growth. The following excerpts from the report of this Conference are illustrative:

> The importance of education as part of national policy has never attracted as much attention and been as widely discussed as it is today—in Europe as well as in North America. Present trends—political, economic, social, and technical—are all focusing attention on the role education should and could play in a modern community.[4]
>
> Education is also more and more widely recognized as a means to economic growth which, since the end of the war, has everywhere been a paramount aim of national policy. In the underdeveloped countries, economic growth is necessary to alleviate widespread poverty. In the more advanced countries, economic growth has become a matter of competition, a yardstick for appraising the ability of different political systems to solve economic and social problems.[5]

USSR

The rapid economic development of Communist Russia was in part the result of one of the most dynamic educational programs of all history. George S. Counts, in his prize-winning book, *The Challenge of Soviet Education,* points out that—

> the Bolshevik leaders from the first have regarded organized education with utter seriousness, far surpassing in this respect the leaders of any free society on earth. . . . Without their vast system of educational agencies the Bolsheviks would not be standing in the position of power which they occupy in the world today.[6]

William Benton, former U.S. Senator from Connecticut, has made four trips to the USSR since 1955 and has given special attention to Soviet education. After his 1962 trip he reported that "the disparity between Russian dedication to education and our own is so grave that I come home a deeply worried citizen." He reported that Russia is not only "stealing the American dream of providing every child an equal opportunity for an education" in the elementary and secondary schools "but in higher education as well." He states that the "Soviet Union's most potent weapon may very well be her quietest weapon, education." Senator Benton warns that the cold war between the Soviet Union and the United States "is likely to turn on which society makes the best use of its potential educational resources."[7]

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[4] Organization for Economic Cooperation and Development. "Targets for Education in Europe in 1970." *Policy Conference on Economic Growth and Investment in Education.* Report II. Paris: the Organization, 1962. p. 15.

[5] *Ibid.*, p. 16.

[6] Counts, George S. *The Challenge of Soviet Education.* New York: McGraw-Hill Book Co., 1957. pp. 306-307.

Asian Nations

Japan, with meager natural resources, nevertheless launched an educational program in the nineteenth century which, early in the twentieth century, resulted in a high level of literacy. Today, Japan has the highest per capita income of any Eastern nation.

The less-developed nations have yet to create the educated and trained human capital essential for high productivity. This lack is a major block to their economic growth.

India recognizes this fact. A. N. Khosla, a leading Indian engineer and member of India's influential Planning Commission, stated the situation thus:

> The wealth of a nation consists of its natural resources and the manpower to develop these resources. India has vast resources of land, water, and minerals. Its population will rise to 431 millions in 1961.
>
> This immense population is our biggest asset. It is also our biggest problem. Properly trained and directed, and employed with due sense of urgency, this manpower can work miracles in the economic development of this country. Neglected and unemployed or under-employed, it can bring about major social and political upheavals. The building up of the country's

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[7] Benton, William. "Big Red Threat: Education." *New York World Telegram*, September 10-13, 1962.

> human resources is, therefore, our first task, and education has the most vital role to play in this task.[8]

UNMEASURED PRODUCTS OF EDUCATION

It is probable that the most significant economic returns from investment in education are diffused and unmeasured qualities in the people of a nation, which in considerable degree are a product of nationwide education. Some of these are identified below.

Social and Political Stability

When the temper of a people is unstable and their decisions are frequently overturned by seizures of power, the climate for financial investment is not good. To the extent that education contributes to social and political stability, it provides an environment which encourages economic investment.

Achievement of Democratic Aims

The United States recognized early in its history that the development and maintenance of a free society require education for all. This factor was dealt with in the Policy Conference cited above as follows:

> Education has always been regarded as a vital factor in achieving the general aims of society, an instrument to make the democratic system more perfect. . . . What is more recent —and has so far received less consideration—is the emergence of a concept of education as an important factor of economic policy.[9]

New Knowledge

New knowledge today is the stuff of progress and even of survival. Universities provide the highly educated personnel required for scientific inquiry. They are a major source of the fundamental research that is the basis of most applied research.

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[8] Khosla, A. N. Address at a meeting of the Indian Panel of Education, August 8-9, 1960.
See also Norton, *op. cit.*, p. 10.

[9] Organization for Economic Cooperation and Development, *op. cit.*, p. 21.

The Conference cited above stated that "there is one field in which investment in higher education is especially desirable: the highly profitable field of research.[10]

Scientific Outlook and Acceptance of Change

The citizens of a nation must understand the value of new knowledge and possess attitudes which permit it to be applied. If superstition and resistance to change stand in the way of applications of new knowledge to such fields as agriculture, industry, and health, progress is balked.

> One of the signs of a progressive economy is its ability to transfer a technical innovation, first from the laboratory to actual production, and then from one unit of production to another. The progress of underdeveloped and semideveloped countries is highly dependent on an acceleration of this transfer process. It is here that the role of education and the choice of the right kind of education can be so important.[11]

Highly Trained Specialists

General education and training throughout the whole population are essential ingredients of a modern society. But it is also of critical importance that there should be some who have specialized education of a high order.

> Education, and especially higher education, should aim at facilitating division of labor; it should prepare people to meet the demand for new specializations of function . . . specialization . . . means that people increasingly work in teams which contain complementary types of knowledge and skill. . . . It is basic for such teamwork that the improved productivity of one member should increase the productivity of other members of the team.[12]

Leadership

Recent events have emphasized the importance of the role of scientific leadership. Modern nations, however, require first-rate leaders in many fields. For example, the importance of the trained entrepreneur is coming to be recognized. Men of insight and broad social understanding are required in government. In fact, advanced education is called for in nearly all fields. The quality and quantity of leaders are largely determined by the effectiveness of schools, colleges, universities, and other educational agencies.

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[10] *Ibid.*, p. 25.
[11] *Ibid.*, p. 24.
[12] *Ibid.*, pp. 24-25.

The ability to organize large numbers of workers for effective work is of growing importance in modern societies. The Conference cited above stated that "education at the leader level yields extra dividends all the way down the line." [13]

The Conference on Education in Relation to Economic Growth concluded that—

> economic growth is generated not only by real capital in the form of tools and machinery, but also by men. And just as technological improvements increase the efficiency of machinery, so education increases the efficiency of manpower. Indeed, recent statistical investigations tend to show that the improvement in the "human factor" accounts for a major part of economic growth.[14]

Evidence is accumulating concerning positive effects of education in increasing production. There is also evidence that neglect of education has serious negative effects. The next section identifies some of the social and economic consequences of inadequate educational opportunity.

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[13] *Ibid.*, p. 25.
[14] *Ibid.*, pp. 23-24.

Penalties of Educational Inequality

VII

It is a shocking fact that the United States, with equal opportunity as one of its ideals, has failed to provide educational opportunity for all children. This failure and its social penalties have been pointed out by a series of studies made since World War I.

A project sponsored by Dwight D. Eisenhower when he was president of Columbia University pointed out that we were "squandering our human resource capital." This waste resulted from "the failure of our society to invest adequately in the development of its people, particularly its young people during their formative years."[1] This notable study took account of illiteracy as it was revealed in connection with military recruitment:

> World War II threw a searchlight on the deficiencies in the educational preparation of the young. . . . Almost two million men out of the 18 million who were screened, (one out of every nine) were total or borderline illiterates.[2]

It was concluded that illiteracy remains a major national deficiency. When millions reach adulthood unable to read and write, it is obvious that there is gross denial of educational opportunity in some parts of the nation. Let us examine recent facts.

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[1] Ginzberg, Eli. *Human Resources: The Wealth of the Nation.* New York: Simon and Schuster, 1958. p. 53.

[2] *Ibid.*, p. 54.

ILLITERACY

According to the U.S. Bureau of the Census, approximately 2.85 million persons in the United States in 1959 were unable to read or write at all.[3] The U.S. Commissioner of Education, testifying in the 1962 *Hearings* of the House of Representatives regarding adult illiteracy, stated:

> Much of our adult illiteracy exists in States that find difficulty in supporting an adequate program of education for children and youth. In fact, States with the lowest level of support for general education tend markedly to show the largest number of educationally deprived adults. However, illiteracy is found throughout the Nation, which means that in some states it is imported, while in others it is home-grown. In the former, illiteracy is due to a failure at the adult education level; in the latter, it represents a failure to provide educational opportunity at the elementary and secondary levels. In either case, it is a condition which should not be tolerated in a democracy. It becomes, therefore, a national problem . . . illiteracy reflects one of two conditions. Either the individual has not had an opportunity to attend school, or he attended a poor school for a short period of time.
>
> According to a 1958-59 Office of Education survey . . . of 15,200 school systems studied, only 4,840 reported any type of adult education programs; and of these 4,840, only 160, or 3.3 per cent, offered instruction in basic literacy education to 47,500 adult illiterates.[4]

In addition to those who cannot read and write, there are millions who are designated as "functionally illiterate," who have completed less than five years of schooling and usually lack ability to make effective use of reading and writing.

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[3] Cohen, Wilbur J. *Adult Basic Education Act of 1962: Hearings Before the Committee on Education and Labor.* U.S. 87th Congress, 2nd Session, House of Representatives Committee on Education and Labor. Washington, D.C.: Government Printing Office, February 1962. p. 9.

[4] McMurrin, Sterling M., *Adult Basic Education Act of 1962,* pp. 17-19.

According to the 1960 Census of Population, some 8.3 million persons aged 25 and over—more than 8 percent of the adult population—had completed less than five years of schooling. Of this number, 4.5 million were men, and 3.8 million were women.[5] These do not reside exclusively in one region. New York has 800,000 in this group; California, 505,000; and Illinois, 365,000. The corresponding numbers in each of the states of Kentucky, Michigan, New Jersey, and Ohio exceed 200,000. Many persons in such states, with less than five years of schooling, are migrants from areas with poor school systems. Among Negroes in the United States, the illiteracy rate is four times as high as among white people.

Many of our citizens fall far short of completing six years of schooling:

> In 1960 there were approximately 115 million persons in the 18-year-and-over age group . . . of these 11,350,000, or 10 per cent, had completed less than 6 years of schooling.[6]

In some cases, illiteracy results from lack of educational opportunity. But in many cases it is due to *inadequate schooling* resulting largely from nonenforcement of school attendance laws; oversized classes in which little attention is given to individual pupil needs; lack of remedial reading classes; and lack of special provisions for children of minority groups, migrant laborers, and other disadvantaged Americans.

The U.S. Commissioner of Education, testifying before a Congressional Hearing in 1962, reported that "it is now increasingly rare for children to avoid school completely," and that what happens is that some attend "a poor school for a short period of time." He stated:

> In seeking the major cause of continuing illiteracy, attention must henceforth be directed not so much to a lack of opportunity for any schooling but to a lack of adequate schooling.[7]

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[5] U.S. Department of Health, Education, and Welfare. *Health, Education, and Welfare Indicators.* Washington, D.C.: Government Printing Office, April 1962. p. v.

[6] Cohen, *op. cit.*

[7] McMurrin, *op. cit.*, p. 20.

SOCIAL LIABILITIES

Lack of schooling is associated with lower earning capacity, higher rates of unemployment, higher rejections from military service, and more dependence on public aid.[8]

Lower Earning Capacity

> Employed workers with an 8th grade education or less have 65 per cent of the incomes between $1,000 and $1,500 and 61 per cent of the incomes between $1,500 and $2,500.[9]

Unemployment

Unskilled workers have the highest rates of unemployment and the lowest average level of education. A U.S. Department of Labor study of March 1959 showed an unemployment rate of 10.0 per cent for workers with under five years completed, a rate of 9.8 per cent for those with five to seven years schooling, 4.8 per cent for high school graduates, and 1.8 per cent for college graduates.

When technological changes displace workers, those workers with little education are the most difficult to retrain for new jobs. Lacking educational background, they have less promise of benefiting from vocational education. They are likely to increase the already overcrowded ranks of casual labor or of the unemployed. Unemployment for long periods of time tends to make a person unemployable.

Rejection from Military Service

In World War II, some 400,000 illiterates were accepted for military service. The Armed Forces provided these men with the educational fundamentals necessary for useful service. Another 300,000 illiterates—equal to 20 army divisions—were rejected completely.

During the Korean war, 19 percent of all recruits were rejected from military service on grounds of educational deficiencies. From July 1950 to September 1961, over 900,000 draft registrants of 6 million examined were rejected on the basis of a mental test alone. This number was almost as great as the number of registrants disqualified on medical grounds. Low educational attainment was the largest single reason for rejection.[10]

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[8] U.S. Department of Health, Education, and Welfare, *op. cit.*, p. vi.

[9] *Ibid.*, p. ix.

Relief Rolls and Public Assistance

The U.S. Assistant Secretary of Health, Education, and Welfare, testifying before a Congressional Hearing in 1962, stated:

> There are 7¼ million persons in our affluent society receiving welfare payments today. Total annual federal, state, and local expenditures for this purpose exceed $4.5 billion. Forty-five per cent of all families with less than $2,000 annual income have a head of the family with less than an eighth-grade education. These families, in turn, constitute the source from which the public welfare rolls develop, when an individual becomes unemployed or sick or some other hazard occurs to him.[11]

Many studies show that recipients of public assistance are likely to be persons of low educational attainment. A 1957 study in New York, for example, revealed that almost one-fifth of the mothers on the aid to dependent children (A.D.C.) rolls had not gone beyond the fifth grade. This study further showed that among families receiving general assistance, one-half of the family heads had completed no more than six years of schooling. Illinois reported in 1960 that one-fifth of the A.D.C. mothers had not gone beyond the sixth grade. In Louisiana, in 1954, one-half of the A.D.C. mothers and three-fourths of the fathers in the home had received only a fifth grade education or less.[12]

A recent Chicago study pinpointed the relation between lack of education and dependency on relief. The study tested a representative sample of relief recipients in Chicago. It found that 50.7 percent of those studied could not pass reading and vocabulary tests at the fifth grade achievement level. The conclusion was that the problems of public welfare stem from unemployment and economic and technological displacement and, most important, from relief recipients' lack of basic educational skills which are essential to compete in our modern society.

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[10] Cohen, *op. cit.*, p. 12.

[11] Cohen, *op. cit.*, p. 11.

[12] U.S. Department of Health, Education, and Welfare, *op. cit.*, p. ix.

On the basis of the sample studied, it was concluded that more than one-half of the 225,000 able-bodied relief recipients of Cook County, Illinois, were functionally illiterate. This county's relief bill for 282,000 recipients, including the ill and the aged, is $16.5 million. According to Raymond M. Hilliard, director of Cook County Department of Public Aid,

> The cost to the community in dollars and wasted human resources will be disastrous if basic literacy education and job training are not provided.[13]

SOCIAL COST OF INADEQUATE SCHOOLING

The evidence is compelling that lack of schooling and poor schooling are associated with such social problems as low earning capacity, unemployment, rejection from military service, and dependence upon public relief in its various forms. This is not to claim that education alone can completely eliminate such major social liabilities. However, it appears that one of the priorities that must be included in a realistic program to eliminate, or at least sharply reduce, the mounting numbers on relief rolls is adequate educational opportunity for every child in the United States. This requires that there be a first-rate school available to every child, with a program fitted to his needs and capacity. There must also be strict enforcement of school attendance laws so that such factors as race, parental indifference, and social and economic status do not result in inadequate schooling.

Educational action to these ends is fully justified solely on the basis of our commitment to equality of opportunity. There is the additional fiscal consideration that it will probably cost less to provide adequate schooling for all than to pay for the rising relief expenditures, which are at least in part due to lack of such schooling.

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[13] New York Times. "Study of Relief Cites Illiteracy." *New York Times*, September 22, 1962. p. 27. Copyright by the *New York Times*. Reprinted by permission.

It is not enough merely to achieve functional literacy in the elementary school. Far too many of those who reach the high school become dropouts before they receive the education and training required for employment and self-reliant citizenship. The next section deals with this problem.

School Dropouts– A Major Threat

VIII

The amount of schooling of different individuals varies enormously. Some children do not continue in school even to the fifth grade. In succeeding grades, the attrition is higher than most people realize.

According to the U.S. Office of Education, the high school graduating class of 1954 contained only 553 of each 1,000 pupils who had reached the fifth grade seven years earlier.

Just how long each child should continue in school is a matter of opinion. There is wide agreement, however, that the many pupils who drop out of school at 16, or at whatever earlier age the law or circumstances permit, constitute a major problem. One study concludes that school dropouts create an explosive situation and are a serious threat to our society.

SCHOOL DROPOUT RATE

For example, the number of high school graduates in 1962, as a percent of eighth grade enrollment in 1957-58, varied from 92.3 percent in Wisconsin to 51.8 percent in Georgia. The median for 50 states and the District of Columbia was 70.6 percent.[1] (See Table II for data on all states.)

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[1] National Education Association, Research Division. *Rankings of the States, 1963*. Research Report 1963-R1. Washington, D.C.: the Association, 1963. Table 47.

The average dropout rate between eighth grade and high school graduation is approximately 32 percent.

It should not be assumed that these 32 percent who quit school in the ninth, tenth, eleventh, or twelfth grades are incapable of learning. Many are the victims of inadequate schooling in one form or another.

AGE OF SCHOOL DROPOUTS

The greatest percentage of withdrawal occurs at about the age when attendance is no longer compulsory, which is 16 years in most states. In October of 1959, 929,000, or 17.1 percent of youths aged 16 and 17 years were not enrolled in school.[2]

GRADE REACHED BY SCHOOL DROPOUTS

Less than 60 percent of the boys and girls who reach the fifth grade stay in school through high school. Out of every three reaching the ninth grade, one fails to get a high school diploma.[3]

> The first major drop occurs between the ninth and tenth grades when many pupils are making the transition from junior to senior high school. . . . Another significant drop occurs between the tenth and eleventh grades. Many of these pupils have obviously tried the secondary school and found it wanting for their needs.[4]
>
> Current trends indicate that about 7.5 million of the young people entering the labor force during the 1960's will not have

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[2] U.S. Department of Commerce, Bureau of the Census. *School Enrollment: October 1959*. Current Population Reports, Population Characteristics, Series P-20, No. 101. Washington, D.C.: Government Printing Office, 1960. p. 8.

[3] Lambert, Sam M., director of research, National Education Association. Testimony before U.S. 87th Congress, 1st Session, House of Representatives Committee on Education and Labor, March 1961. p. 173.

[4] National Education Association, Research Division and Department of Classroom Teachers. *High-School Dropouts*. Discussion Pamphlet No. 3. Washington, D.C.: the Association, 1959. p. 6.

TABLE II 1962 High School Graduates as Percent of 1957-58 Eighth Grade Enrollment

1.	92.3%	WISCONSIN
2.	88.2	MINNESOTA
3.	86.4	CALIFORNIA
4.	84.8	NEBRASKA
5.	84.5	ILLINOIS
6.	84.2	WASHINGTON
7.	80.6	HAWAII
8.	78.8	NEW JERSEY
9.	78.6	IOWA
10.	78.4	MICHIGAN
11.	78.1	KANSAS
12.	78.1	SOUTH DAKOTA
13.	78.0	PENNSYLVANIA
14.	77.9	OREGON
15.	77.2	UTAH
16.	76.8	NORTH DAKOTA
17.	74.1	INDIANA
18.	74.1	NEW YORK
19.	73.3	MONTANA
20.	73.3	RHODE ISLAND
21.	73.1	CONNECTICUT
22.	73.1	WYOMING
23.	73.0	MISSOURI
24.	72.9	COLORADO
25.	72.5	IDAHO
26.	72.4%	OHIO
27.	72.0	DELAWARE
28.	71.1	ARIZONA
29.	70.1	ALASKA
30.	69.3	NEW HAMPSHIRE
31.	68.2	MASSACHUSETTS
32.	67.9	OKLAHOMA
33.	67.5	MARYLAND
34.	63.7	NEVADA
35.	62.9	FLORIDA
36.	62.2	NEW MEXICO
37.	61.0	MAINE
38.	60.6	TEXAS
39.	57.8	ARKANSAS
40.	57.8	LOUISIANA
41.	57.8	MISSISSIPPI
42.	57.4	NORTH CAROLINA
43.	56.4	VERMONT
44.	55.5	WEST VIRGINIA
45.	55.1	TENNESSEE
46.	55.0	ALABAMA
47.	54.2	SOUTH CAROLINA
48.	52.6	KENTUCKY
49.	51.9	VIRGINIA
50.	51.8	GEORGIA
	70.6	50 states and D.C.

SOURCE National Education Association, Research Division. Rankings of the States, 1963. Research Report 1963-R1. Washington, D.C.: the Association, 1963. Table 47.

completed high school, and that 2.5 million will not have completed even the eighth grade.[5]

REASONS FOR DROPPING OUT OF SCHOOL

According to the U.S. Department of Labor, Bureau of Labor Statistics,

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[5] U.S. Department of Labor, Bureau of Labor Statistics. *From School to Work.* Washington, D.C.: Government Printing Office, 1960. p. 1.

> Pupils who drop out from the eighth, ninth, and tenth grades most often do so for reasons closely related to their school experiences, such as grade retardation, academic difficulties, and failure to participate in pupil activities. Dropouts from the later grades, however, are chiefly accounted for by other well-defined reasons such as marriage, or the need to work.[6]

Lack of guidance counselors and courses of study to meet the widely varying capacities and goals of high school pupils today are among the major factors causing pupils to quit school. Parental and community attitudes are also influential. After visiting public schools in "two totally different neighborhoods," Conant concludes:

> One lesson to be drawn from visiting and contrasting a well-to-do suburb and a slum is all important for understanding American public education. This lesson is that to a considerable degree what a school should do and can do is determined by the status and ambitions of the families being served.[7]

CHILDREN OF MIGRANT WORKERS

It is estimated that 400,000 migrant workers, accompanied by more than 100,000 children, travel from community to community and from state to state each year in search of agricultural employment.

Educationally, these children are the most deprived group in the nation. Frequent moves force them to fall further and further behind in their studies. When they drop out of school for good, their average achievement is below the fourth grade level.[8] A few states are attempting to deal with this problem, but it is an extremely difficult one.

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[6] National Education Association, Research Division and Department of Classroom Teachers, *op. cit.*, p. 7.

[7] Conant, James B. *Slums and Suburbs: A Commentary on Schools in Metropolitan Areas.* New York: McGraw-Hill Book Co., 1961. p. 1.

[8] Janson, Donald. "Migrant Pupils Miss Schooling." *New York Times*, July 22, 1962. Copyright by the *New York Times*. Reprinted by permission.

CHARACTERISTICS OF SCHOOL DROPOUTS

The National Education Association Project on School Dropouts is studying intensively the characteristics of school dropouts.[9] The following are some of the findings:

1. The average dropout is not uneducable. He does tend to score lower on IQ tests than his in-school counterpart, but a nationwide study conducted by the U.S. Department of Labor showed that 70 percent of the dropouts surveyed had registered IQ scores above 90, clearly in the educable group. An intensive six-year study in the State of New York revealed that 13 percent of the dropouts had IQ scores above 110.[10] This rating should permit high school graduation and some post-high school training.

2. The average dropout is at least two years retarded in reading ability by the time he quits school. Reading remains the fundamental educational skill; without it no student can perform adequately in school. The consequences of retardation in reading are obvious: dropouts fail three times as many courses as "stay-ins," and 9 of every 10 dropouts have been retained in some grade at least one extra year.

3. The majority of dropouts are from lower socioeconomic families. They often come from families where the father is missing, where cultural background and horizons are limited, where education is viewed with indifference, distrust, or open resentment. Any redemptive or preventive effort of the school will have to take account of the student's total environment and will depend heavily on the school's staff of guidance counselors and school-community coordinators.

4. There is a high percentage of dropouts among minority groups. This fact was detailed as follows at the 1961 Conference on Unemployed, Out-of-School Youth in Urban Areas:

> Estimates of the number of Mexican-American youth who leave school before getting to high school range as high as 50 percent in the major cities.

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[9] Schreiber, Daniel. "School Dropouts." *NEA Journal* 51: 51-52; May 1962.
[10] *Ibid.*, p. 52.

> Today, two thirds of all Negroes live in urban areas, one third in urban areas outside the South.[11]
>
> In a slum section composed almost entirely of Negroes in one of our largest cities the following situation was found. A total of 59 percent of the male youth between the ages of 16 and 21 were out of school and unemployed. They were roaming the streets. Of the boys who graduated from high school, 48 percent were unemployed in contrast to 63 percent of the boys who had dropped out of school.
>
> An even worse state of affairs was found in another special study in a different city. In a slum area of 125,000 people, mostly Negro, a sampling of the youth population shows that roughly 70 percent of the boys and girls ages 16-21 are out-of-school and unemployed.[12]
>
> The problem of unemployed youth in the large cities is in no small part a Negro problem. We do not facilitate its solution by trying to find phrases to hide this fact.[13]

5. Dropouts are not entirely from minority groups. Of the four special surveys made for the Conference on Unemployed, Out-of-School Youth in Urban Areas, two dealt with racially mixed urban school districts where the majority of the dropouts interviewed were white. Like the minority group dropouts, however, most of these white boys and girls belonged to lower income families who had recently arrived in the city. Theirs were families who had left subsistence farms, families said to be among the nation's least educated, with a lack of motivation no less deadening than that of darker-skinned families from depressed areas. But the problem of school dropouts is not confined to the big cities. It exists in small towns. It is particularly acute in rural areas, and the problems of the rural areas and the big cities are closely related.[14]

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[11] National Committee for Children and Youth. *Social Dynamite.* Report of the Conference on Unemployed, Out-of-School Youth in Urban Areas. Washington, D.C.: the Committee, 1961. p. 16.

[12] *Ibid.*, p. 26.

[13] *Ibid.*, p. 32.

[14] *Ibid.*, pp. 17-18.

STATE-WIDE STUDY OF DROPOUTS

A state-wide study of dropouts by the Illinois Office of Public Instruction revealed the following:

> Approximately 54 percent of the students who took more than eight years to finish elementary school became high school dropouts.
>
> Only 2 percent of the students who took college preparatory courses became dropouts, while 38 percent of those who studied general curriculum left high school before graduating.
>
> About 60 percent of the students who were absent more than 25 days out of the normal 185-day school year became dropouts.
>
> Over 30 percent of the dropouts occurred before the end of the freshman year; another 30 percent occurred during the sophomore year.
>
> High school graduates held more part-time jobs than dropouts held.
>
> Dropouts had more frequent access to family cars and owned more cars than did those who graduated.
>
> Students who finished high school engaged in more extracurricular activities than did dropouts.
>
> A large percentage of dropouts came from broken homes.[15]

WHAT HAPPENS TO SCHOOL DROPOUTS?

A number of studies have been made to discover what happens to young people who drop out of school. Among the more important findings are these:

1. A large percentage is unemployed. The U.S. Department of Labor in October 1960 surveyed the employment status of June 1960 graduates and pregraduation dropouts. The survey found that—

> about three-fourths of the male dropouts, but almost nine-tenths of the high-school graduates (those not enrolled in college), were working. About two-thirds of the unmarried

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[15] Overview. "Late News." *Overview* 3: 22; August 1962. Copyright 1962, Buttenheim Publishing Corp.

> female dropouts, but three-fourths of the graduates, were working. Furthermore, the unemployed dropouts had been unemployed for longer periods than the unemployed graduates.[16]

Conant stated that—

> in the slums of the largest cities . . . the great need is for reduction of unemployment of male youth under 21.[17]
>
> The present (1960) unemployment rate nationwide is roughly 7 per cent for all age brackets, but unemployment among youth under 20 years of age is about 20 per cent, or nearly three times greater than the nationwide rate for all workers.[18]

A survey made in New York City in the summer of 1962 showed that 45,000 youths needed work but were unable to find it. Many of these were Puerto Ricans and Negroes, the groups which have the most difficulty in finding jobs. Many are school dropouts, and their lack of education and training further hampers them.

Ewan Clague, Director of the Bureau of Labor Statistics, stated at the Conference on Unemployed, Out-of-School Youth in Urban Areas that 300,000 boys and 115,000 girls between the ages 16 and 20 reported themselves out of school looking for work in October 1960.

2. Most school dropouts when employed work at unskilled jobs. Unskilled and immature, the dropout finds himself abandoned in a labor market where he has little to offer.

> Casual jobs and work requiring little in the way of skills training typify the employment activity of most 14-17 year olds. Job opportunities for youth in this age group are concentrated mainly in the trade and service industries and in agriculture.[19]

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[16] Cooper, Sophia. "Employment of June 1960 High School Graduates." Special Labor Force Report No. 15. *Monthly Labor Review* 84: 463-70; May 1961.

[17] Conant, *op. cit.*, p. 35.

[18] Conant, James B. "Social Dynamite in Our Cities." *Social Dynamite*, p. 27.

[19] White House Regional Conferences. *Young Workers Under 18.* Fact Sheet. Washington, D.C.: the Conferences, 1961.

The jobs available to school dropouts are usually of the lowest order. Frequently they offer irregular employment and are the least open to advancement. Also, employers are loathe to employ and to provide on-the-job training to youths in the 16-21 age group, since they may be subject to call for military service.

> Two-thirds of the nation's force of service workers and operatives and laborers are former dropouts. Two-thirds of the unemployed men and women in the United States possess less than a high school education.[20]

3. Dropouts face keen competition. Because of the rapid rise in births in the 1940's and 1950's, the population reaching age 18 will shortly increase especially fast—from 2.6 million in 1960 to 3.8 million in 1965, up nearly 50 percent in only five years. The 1965 rate will continue through 1970. Because of this increase, the number of new workers entering the labor force will mount steadily. Altogether, 26 million young people will enter the labor force during the 1960's, almost 40 percent more than during the 1950's.[21]

The estimated 7.5 million youths who, according to recent experience, will drop out of school during the 1960's may glut the labor market already overcrowded with unskilled workers at a time when the number of unskilled occupations is declining.

4. The life earnings of school dropouts are low. During his lifetime, the average boy who drops out of school before high school graduation will earn much less than the average high school graduate. "The typical male high school graduate can be expected to earn over his lifetime (from age 25 to death) $72,000 more than the typical male elementary school graduate." [22]

SCHOOL DROPOUTS AND DELINQUENCY

Exact numbers and percents of school dropouts who become delinquent are not known. It is claimed that they are relatively large. Out-of-school, unemployed youth are more apt to become delinquent. A youngster out of school and out of work is a potential source of trouble to himself and to the community. A youth who drops out of school and cannot find a job, which gives him a sense of belonging to the community and of purpose in life, is apt to feel at odds with society and is more likely to become delinquent.

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[20] Schreiber, *op. cit.*
[21] U.S. Department of Labor, *op. cit.*
[22] Lambert, *op. cit.*, p. 171.

Careful studies of juvenile delinquency show that this problem is not confined to communities and families of low socioeconomic status. It occurs in favored communities and families, although at a lower rate of incidence. Nor is juvenile delinquency a peculiar problem of the United States. It is worldwide. These facts call for fundamental study of this disturbing problem and incisive action by responsible agencies, including the schools.

CONCLUSIONS

1. Today, for most youths under 18, work should be secondary to getting education and training appropriate to their abilities and needs.

2. Lack of basic education seriously complicates the retraining of the long-term unemployed.

3. A substantial percentage on relief rolls are those who lose their jobs and lack the training for other employment.

4. Out-of-school, unemployed youths commit a disproportionately high percentage of juvenile crimes.

5. Full development of each youth's talents and abilities is the key to meeting future manpower needs. To assure such development, youths must have protection and guidance, jobs that provide productive experience, and, perhaps most important, the kind of education needed in our modern complex and technically oriented economy.

The above conclusions raise many questions about the adequacy of today's public elementary and secondary schools. Is the guidance program adequate? Is the curriculum or program of studies broad enough to meet the present needs of America's children and youth? Are adequate provisions made for the children of "disadvantaged Americans,"[23] i.e., parents with low socioeconomic status, language handicaps, lack of vocational skills with resulting unemployment, and little interest in having their children continue in school? Are the quality of teachers and their training and teaching equal to the demands of a rapidly changing society?

The powerful impacts of our dynamic economy upon all Americans hold fundamental implications for public schools. The next section identifies some of the improvements required in these schools if they are to meet changing demands.

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[23] National Education Association and American Association of School Administrators, Educational Policies Commission. *Education and the Disadvantaged American*. Washington, D.C.: National Education Association, 1962. 39 pp.

Scope and Quality of Education

IX

Earlier parts of this report list demands that our dynamic society is making on the public schools and that are not being fully met. What changes and improvements in public education are necessary to meet these demands?

ADEQUATE SCHOOLING FOR ALL

There should be decisive action so that no child will reach adulthood lacking the basic schooling essential for successful living in our complex and changing society. This requires that there be good schools in all communities, not just in some communities. There must be enforcement of school attendance laws. Inadequate schooling should no longer be a major cause of millions of functional illiterates who suffer the disabilities described in section VII of this report and who are the source of some of our most serious social problems.

QUALITY SCHOOLS IN EVERY COMMUNITY

There should be a stepping up of the quality of instruction throughout the public schools of the United States. The facts of this report urgently demand quality schooling to meet the insistent needs of a technological society which continually requires more and better schooling.

Just what quality schooling is will be left to the vigorous and discordant voices who are now debating this question. Rather, let us look at some of the prerequisites for a quality school.

Quality Teachers

A quality school must have well-prepared teachers. Some schools do not have such teachers. There has been and is a continuing shortage of new teachers—those members of the current class of college seniors who will meet the requirements for the standard certificate in September of each year. The prospective 1962 supply from this source was approximately 106,000, while the estimated demand for all public school needs in September 1962 was 240,000.

The 106,000 was not sufficient even to replace the 125,000 teachers leaving teaching service and the additional 35,000 required by the annual increase in public school population of approximately 1 million. The prospective supply also failed to meet the estimated need for 80,000 additional teachers (a) to relieve overcrowded classes and to eliminate part-time sessions, (b) to provide instruction and services not now provided, and (c) to replace teachers not fully prepared for their assignments.[1]

The conclusion of the study that released the above statistics is the following:

> The increase over the preceding year [in the supply of new teachers] is not proportional to the increased needs; the prospect for substantial relief from the chronic shortage is not in sight.[2]

Several factors account for this chronic shortage. Among them is the fact that only about 83 percent of the prospective new elementary school teachers and about 68 percent of the prospective new high school teachers actually seek teaching positions.[3] This is due, in part, to the fact that teachers generally receive lower salaries than are received by those with equal degrees of preparation in other professions.[4]

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[1] National Education Association, Research Division. *Teacher Supply and Demand in the Public Schools, 1962.* Research Report 1962-R8. Washington, D.C.: the Association, 1962. pp. 5, 21.

[2] *Ibid.*, p. 7.

[3] *Ibid.*, p. 5.

Accordingly, school officials cannot secure qualified teachers for all classrooms. With such funds as they have, they seek to do so. When enough fully prepared teachers are not available, the best to be found are employed, even though they fall short of what is required for quality schools.

The shortage of teachers is exaggerated by the imbalance between those preparing for elementary and secondary school posts. The most severe shortage by far is at the elementary level, where almost one-half of the new supply of teachers has to be drawn from miscellaneous sources in the general population.

At the secondary level, the problem is one of achieving a better "*distribution of the newly produced supply* among the teaching fields. In a few fields [such as men's physical education and the social sciences] the concentration is far beyond the possibility of employment as high-school teachers."[5] At the same time there is a shortage of teachers of mathematics and physical sciences and of women's physical education and home economics.

Preparation of Teachers

Much energy has been wasted in recent years in debating about which is more important: mastery of subject matter or professional preparation concerning how best to teach it. Both are essential. The issue is one of emphasis and means.

Some would provide teachers with training in the content of the field they are to teach and then place them in classrooms as apprentice teachers or teacher-aides. They would postpone or eliminate professional preparation dealing with such matters as child growth and development, the significance of wide differences in individual aptitudes of pupils, and the methods whereby motivation can facilitate learning.

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[4] National Education Association. *Professional Salaries for Professional Teachers.* Washington, D.C.: the Association, 1961. p. 8.

[5] National Education Association, Research Division. "Teacher Supply and Demand in the Public Schools." *NEA Research Bulletin* 40: 95; October 1962.

A rounded point of view would seek to provide teachers who know their subject, understand their pupils, and know how best to teach them.

Physical Facilities

There is a shortage of classrooms and other physical facilities required for quality schools, due to rising school enrollments and costs of building construction. The Fall 1961 report of the U.S. Office of Education described the situation thus:

> The accumulated shortage of instruction rooms from past years remains high despite the fact that in the last 6 years (1955-56 through 1960-61) an annual average of 69,100 rooms were completed.
>
> Although 62,700 rooms are scheduled for completion in 1961-62 only a small part of the total can be applied against the reduction of the backlog of 127,000 rooms. This is due to the fact that thousands of rooms will be needed by the fall of 1962 to provide for population shifts, the estimated annual enrollment increase of over a million pupils, and replacements of rooms abandoned during the year for various reasons.[6]

Teachers and Teaching Machines

One of the open questions regarding the number of teachers needed for quality schools concerns the use of various mechanical devices such as teaching machines. Some say that these machines can be used to reduce the pupil-teacher ratio, that is, that teachers are to be replaced to a certain extent by educational television and teaching machines. Others claim that mechanical teaching devices should aid rather than replace teachers. Additional experimentation and research are needed to find answers to major questions about the role of programmed instruction.[7]

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[6] U.S. Department of Health, Education, and Welfare, Office of Education. *Fall 1961 Enrollment, Teachers, and School Housing.* Circular No. 676. Washington, D.C.: Government Printing Office, 1962. p. 6.

[7] Cronbach, Lee J. "What Research Says About Programmed Instruction." *NEA Journal* 51: 45-47; December 1962.

CURRICULA TO MEET NEEDS OF ALL GROUPS

The public elementary and secondary schools should provide educational opportunities to meet the special needs of all groups in the widely diverse population they now enroll.

Our schools should not merely enroll all children and youths. They should also offer programs which meet the special needs of all groups. The high schools, in particular, have undergone a revolution since the turn of the century. In 1900, they enrolled a small, selected, and relatively homogenous population preparing for the higher walks of life. Now they enroll youths who represent the full range of socioeconomic status, motivation, educability, and occupational destination.

The problem is to devise curricula, types of school organization, and community cooperation that come to grips with current social and educational realities. The difficulties of achieving this transformation will be increased if some of our so-called better informed citizens continue to reveal "a shocking ignorance of the social problems with which the modern school is confronted." [8]

Conant, one of the few who has taken the trouble to visit a substantial sampling of the vastly differing 21,000 high schools of the United States, defines the issue thus:

> Without an understanding of the complexities of public education resulting from the diversities of American communities, there can be no productive discussion of the shortcomings of our tax-supported schools.[9]

The immediately following pages pinpoint some of the groups that in all communities should have schooling appropriate to their capacities and life objectives.

DEVELOPMENT OF THE TALENTED

More attention should be given to the early identification and development of talented youth.

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[8] American Academy of Arts and Sciences. *Report of the Committee of the Teaching Profession.* New York: American Council of Learned Societies.

[9] Conant, James B. *The Child, the Parent and the State.* Cambridge, Mass.: Harvard University Press, 1959. p. 64.

Greater effort on a broader scale should be made to identify talented youth in elementary and secondary schools as well as in college and to provide programs commensurate with their abilities. Many talented high school students today are not working to capacity. They are not sufficiently challenged by present courses to develop their talents to the maximum. The result is that too large a percentage of our brightest high school graduates do not enter college, and of those that do, too many leave before graduation.

Studies have shown that due to lack of funds or lack of incentive to attend college, a large fraction of our brightest youth are failing to get the education that would permit them to work at the levels for which they are potentially qualified. It was found that fewer than one-half of the best 25 percent of all high school graduates graduate from college. Only 6 out of 10 of the potentially most promising 5 percent of high school graduates earn college degrees.[10]

A nationwide survey of 1959-60 high school seniors showed that plans for attending college depended to a large extent on the following factors:

1. *Father's occupation.* Of those whose fathers were white collar workers, 66 percent were planning to go to college as compared with 37 percent whose fathers were manual or service workers and 34 percent whose fathers were farm workers.

2. *Family income.* Of the 1959-60 high school seniors, 68 percent of those whose family income was $7,500 or over planned to go to college as compared with 52 percent of those whose family income was $5,000-$7,499; 40 percent, when it was $3,000-$4,999; and 23 percent when it was under $3,000.

3. *Sex.* More boys than girls indicated their intention to enroll in college, despite a larger number of girls than boys among high school seniors in 1959-60.[11]

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[10] Wolfle, Dael. *America's Resources of Specialized Talent.* Report of the Commission on Human Resources and Advanced Training. New York: Harper & Row, 1954. p. 8.

[11] *Occupational Outlook Quarterly* 6: 11-14; May 1962.

See also U.S. Department of Commerce, Bureau of the Census, and U.S. Department of Agriculture, Economic Research Service. *Educational Status, College Plans, and Occupational Status of Farm and Non-Farm Youths.* Series Census-ERS P-27, No. 10. Washington, D.C.: Government Printing Office, 1962.

4. *Educational status of parents.* Parents' education plays a decisive role, according to the U.S. Bureau of the Census:

> The proportion of sons who attended (or completed) college increases dramatically according to the level of schooling completed by their fathers. These proportions ranged from nearly 55 per cent of the sons of fathers with a high school diploma (but no college) to 70 per cent of the sons of fathers with some college, and 88 per cent of the sons of fathers who were college graduates. Fewer than one-fourth of the sons of fathers without a high-school diploma had either graduated from college or had some college attendance.[12]

Of the more than 1 million high school seniors in late 1959 who had no plans to attend college or were undecided, the largest number gave one or more of these reasons: money, home needs, poor grades, and no desire to continue in school.

Each year in the early 1960's, nearly 3 million young people will reach age 18. By 1965, this number will rise sharply to nearly 4 million. If present trends continue, about two-thirds of these young people will graduate from high school, and about one-half of the graduates will enter college.

It is doubtless true that the percentage of talented children correlates with such factors as family income, educational status of parents, and father's occupation. It is also probably true that a considerably larger number of youths qualified for higher education would be discovered among the socioeconomically average and below-average families if a more intensive search were made to find them.

The early identification and development of talented youth have long been a concern of educators. The Educational Policies Commission, for example, in its 1944 and 1948 reports urged that special attention be given to youth with superior intellectual capacity and to those who possess special talents.[13]

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[12] *Ibid.*, pp. 11-12.

See also U.S. Department of Commerce, Bureau of the Census. *School Enrollment and Education of Young Adults and Their Fathers.* Series P-20, No. 110. Washington, D.C.: Government Printing Office, 1960.

[13] National Education Association and American Association of School Administrators, Educational Policies Commission. *Education for All American Youth.* Washington, D.C.: National Education Association, 1944. 402 pp.

National Education Association and American Association of School Administrators, Educational Policies Commission. *Education for All American Children.* Washington, D.C.: National Education Association, 1948. 292 pp.

It highlighted this concern in its 1950 report, *Education of the Gifted:*

> The American people must invest a larger portion of their economic resources in the education of individuals of superior talent. Such an increase in investment will result in a disproportionately large return in social dividends.[14]

The time has come when halfway measures to identify and develop talented youth will not suffice. A nationwide effort is called for.

In recent years, the National Science Foundation and other agencies have responded to the call for the full development of gifted youths, but efforts in this direction need to be increased. When considering the cost involved, perhaps heed should be given to this advice: To make money immortal, invest it in men.

QUALITY SCHOOLS FOR AVERAGE STUDENTS

Better education for those of average ability is essential. The quality of education provided the great middle group, those of average and of slightly below and above average scholastic ability, should be improved by general education courses, suited to individual and social needs, and opportunities for training in a variety of skilled and technical fields as well as in some semiprofessional occupations.

One of the distinctive features of American public education has been its role in upgrading the occupational status of the labor force of the United States. Generally, the son, with better access to educational opportunity than his father, has qualified for a job requiring higher training and permitting higher earnings. This has both lifted the economic status of the individual worker and supplied the additional trained manpower required by a growing economy.

This highly significant role of American education can be clearly seen as it affects immigrant families. Released from the socioeconomic stratification and class structure of education in Europe, the son and grandson of the immigrant have had opportunity to secure the general and vocational education that permitted them to rise above the lower socioeconomic levels to which their forebears were chained.

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[14] National Education Association and American Association of School Administrators, Educational Policies Commission. *Education of the Gifted.* Washington, D.C.: National Education Association, 1950. p. 88.

There are those who would sharply restrict educational opportunity. They inveigh against mass education. They would limit educational opportunity beyond the junior high school to a selected few. This would be a reversion to a class-structured system of education, formerly characteristic of Europe, but which is now being modified toward a more democratic pattern.

The United States should not turn back the clock in education. Rather, it should continue the policy of making its schools more effective for all, at both the elementary and the secondary school levels. Several states have extended public education through grade 14 by establishing junior or community colleges. These institutions offer opportunity for continued general education and for technical training in accord with the abilities and goals of the students. Many continue in colleges and universities, and others complete their full-time school attendance at the end of grade 14.

SPECIAL PROGRAMS FOR THOSE OF LOWER ABILITY

A high priority should be the development of effective programs for those below average in scholastic ability and accomplishment.

The most neglected group in the public schools are those students, approximately 30 percent of the total enrollment, who have little aptitude for academic studies or even for courses which lead toward skilled and technical occupations. Eliminated from the lower secondary school grades or earlier, they compose the core of the unemployed and untrained school dropouts described in section VIII of this report.

If society is to deal with these youths intelligently, there must be much exploration of local, state, and national employment needs at the less-than-skilled levels. Employers, labor, and school officials, through cooperative effort, should develop the kinds of training, both in and out of school, that will permit these pupils to become responsible citizens, employed in semiskilled and service jobs.

The operatives and kindred workers group, according to the U.S. Department of Labor, Bureau of Labor Statistics, during the 1957-75 period, is expected to decline from about 19.5 percent to about 17.5 percent of the total employment. Nevertheless, about 3 million workers will be added to the operatives group, and they will still remain the largest occupational group in our labor force.[15] In the service industries, employment will continue to grow faster than in the production industries, in fact, faster than in the labor force as a whole.[16]

Vocational education programs, as well as most education programs, have done little for the youth of low academic aptitude. The schools should accept some responsibility for making these youths competent for employment. This will require that the vocational educator be less selective as to those admitted to some type of occupational training.

Below are excerpts from one proposal concerning the kind of education that should be provided for those of below average academic ability and achievement.

> Everyone should have an opportunity to prepare for some socially useful occupation at whatever level. . . .
>
> There is no suitable universally accepted pattern for preparing high-school youth for semi-skilled, operative, and non-apprenticeable service occupations. As a result, we do not truly practice what we preach concerning the need for universal vocational education. . . .
>
> We know the make-up of today's and tomorrow's work force, but we haven't designed our educational programs according to the great opportunities available. . . .
>
> A new approach to vocational/industrial education must be explored which might bring together realistic labor-force requirements, individual aptitudes and needs, and the tragically high dropout rate of our schools. The compelling purpose of

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[15] U.S. Department of Labor, Bureau of Labor Statistics, Division of Manpower and Employment Statistics. *Manpower Needs and Resources of the United States, 1960-75*. Preliminary report. Washington, D.C.: Government Printing Office, 1960. p. 17.

[16] *Ibid.*, p. 17a.

> such an approach should be to prepare average and less-than-average pupils for a variety of semi-skilled and service jobs that exist in industry. . . .
>
> Much study and experimentation will be required before a thoroughly satisfactory program can be developed.[17]

All students—the gifted, the average, and the less than average—must be educated and trained to be contributing members of our American democracy. While the need for social integration of America's diverse and mobile population is large, it by no means demands a common curriculum for all. Differentiated curricula can serve both social integration and technical specialization, whereas a common curriculum cannot.

COUNSELING AND GUIDANCE SERVICES

More extensive counseling and guidance services should be provided for each student. Guidance in the elementary school, as at all other school levels, requires knowing pupils as individuals—not merely as a group studying reading or arithmetic. Adequate counseling and guidance services should include identifying the gifted and planning work commensurate with their abilities; seeing that slow learners have a chance for success and encouraging them to get as much education as they can; discovering the special needs of children from disadvantaged homes; seeing that pupils in the lower 30 percent in ability are not merely marking time but, in so far as possible, are acquiring a basic education and are looking forward to some form of vocational training; and helping pupils who have special problems of educational, social, and emotional adjustment.

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[17] Eddy, Max, and Moss, Jerry, Jr. "Out of School and Ready To Work." *Overview* 3: 42-44; August 1962. Copyright 1962, Buttenheim Publishing Corp.

See also Magnifico, L. X., and Doll, Eugene E. "Out of School and Self-Supporting." *Overview* 3: 33-34; September 1962. Copyright 1962, Buttenheim Publishing Corp.

See also Goldstein, Herbert. *The Educable Mentally Retarded Child in the Elementary School.* What Research Says to the Teacher Series, No. 25. Prepared by the American Educational Research Association in cooperation with the Department of Classroom Teachers. Washington, D.C.: National Education Association, May 1962. 32 pp.

This means discovering, in their incipient stages, the causes of such problems as failure in school work, inability to get along with other pupils, and more or less serious delinquency when it occurs. It means cooperation of the pupil, his teachers, and his parents in solving the difficulty. When such problems are ameliorated in elementary school, they are less apt to become deep-seated by the time the pupil reaches junior and senior high school.

Secondary school pupils need help on problems that occur during adolescence. Counselors in all high schools, especially in large comprehensive schools, play a particularly vital role. On the basis of previous academic accomplishment in the lower schools, tests of mental ability, statements of former teachers, and the student's interests and future plans, in consultation with his parents when possible, the student is helped to select his high school courses. His progress is checked at regular intervals, and adjustments are made, designed to prevent failure and dropping out of school.

High school and junior college students and college freshmen and sophomores are at critical stages in career choices. With little experience and limited backgrounds, they need facts about the occupations they are considering. Bad decisions at this point may result in serious wastes of human talent.

These are the years when the school counselor supplies the student with vocational information. On the basis of his present and past school records, work experience, aptitude tests, information from teachers who know him best, and deep-seated personal interests, the counselor confers with him regarding possible careers—training needed, personal qualities necessary for success, and possible opportunities, financial and otherwise.

With this help, the student is in a better position to understand himself—which is the central purpose of all guidance—to establish personal goals, to meet personal problems, and to tentatively choose a suitable vocation and the college or institution where he can best continue his education.

To aid in this latter choice, the school counselor supplies college catalogues, giving such information as entrance requirements, courses offered, and cost of attendance; he also gives information about major occupational requirements and trends. Counselors should ever be on the alert to discover gifted pupils who because of low socioeconomic status may not be planning to continue their education and to help them to find means to do so. A case-record file of each student and an up-to-date library of college catalogues, studies of occupations, and similar reference materials are among office needs. The counselor must also have the ability to enlist the cooperation of such groups as faculty, parents, management and labor, and social agencies.

The work of the counselor or guidance officer is of critical importance in the lives of many students. This work requires special personal qualities and graduate training.

SIZE OF SCHOOL AND RANGE OF OFFERINGS

Small high schools should be consolidated to permit the offering of a wider range of courses to meet the needs of all students.

Only about 4,000 of the 21,000 senior high schools in the United States are large enough to provide adequately for a typical student body. One-third of high school seniors are attending high schools that are too small to provide, except at excessive cost, the range of offerings that should be available. Able students do not have a chance to study physics, advanced mathematics, or a third or fourth year of a modern foreign language because these courses are not offered. Nor is it practical for such schools to offer several choices of technical courses for those of lesser ability. A few high schools must remain small. Many can be consolidated, however, under modern conditions of transportation. The movement in this direction needs to be accelerated.[18]

The foregoing pages list some of the basic improvements required in the scope and quality of public education if it is to meet changing and new demands made upon it. The proposed improvements are already being initiated in some of our better developed and better financed schools and school systems. What needs to be done is to lift the scope and quality of education in all schools to the level now found in a few of the best schools and school systems of the United States. Action to this end will require additional expenditure. The next section deals with this problem.

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[18] Conant, *op. cit.*, pp. 36-39, 173-74.

Counting the Cost

X

To capitalize the full power of education in developing our human resources will require additional funds. It will cost something to provide schools in every community able to meet the new and changing demands of a technological age. It will cost something to develop curricula that are effective in capitalizing the widely varying talents of all youths—the gifted, the large group of average ability, and those of low scholastic aptitude. It will cost something to eliminate the inadequate schooling that is in part the cause of continuing illiteracy and the problems originating among youths who are neither in school nor employed. It will cost something to recruit and hold a sufficient number of well-qualified teachers. It will cost something to eliminate the shortage of school buildings and other necessary facilities for a mounting school population.

Money is, therefore, one of the essentials if these and other educational improvements outlined in previous sections are to be achieved.

"MONEY ISN'T EVERYTHING"

In securing adequate support for public schools, opposition is often met in the statement, "Money isn't everything." This is true. But it is also true that money is something, and a very important something in obtaining quality schooling for all.

The issue is not one of the sequence of money and quality. Rather the problem is one of making additional funds count the most in buying the amount and quality of schooling demanded by the United States. The evidence now available indicates that there is substantial correlation between quality of schools and their level of expenditure.

A number of lines of research indicate that higher per pupil expenditure is a major and essential factor in achieving quality education, regardless of one's definition of quality.[1] This appears to be true even among favored school districts, all of which are well above average in financial support. Apparently, adequacy of support as a factor in increasing educational quality has not reached the point of diminishing returns among schools with the highest levels of cost.[2]

QUALITY AND VARIATIONS IN SCHOOL SUPPORT

One who has visited schools in the United States financed at the lower levels, as compared with others financed at higher levels, will need no further evidence that money makes an enormous difference in the quality of educational output.

There is abundant evidence on this point. The first study that revealed the full range of expenditures per pupil of school districts in the United States was for the school year 1939-40. It showed that the top-financed school districts were spending 60 times as much per pupil as those with lowest per pupil expenditure.[3] The social liabilities, such as illiteracy, low educational attainment, and low earning capacity, which accompanied meager expenditures for schools in some school districts, were described to Congress and other groups many times between 1918 and 1962. It was emphasized that substantial increases in funds would be required to correct the situation.

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[1] Norton, John K. *Does Better Education Cost More?* Washington, D.C.: Committee on Educational Finance, National Education Association, 1959. pp. 41-44.

[2] Associated Public School Systems. *Does Money Make a Difference?* New York: Institute of Administrative Research, Teachers College, Columbia University, 1958. 16 pp.

[3] Norton, John K., and Lawler, Eugene S. *Unfinished Business in American Education.* Washington, D.C.: National Education Association and American Council on Education, 1946. p. 4.

Per pupil average expenditure in 1962 for current expenses ranged from over $500 in three states (New York, New Jersey, and Illinois) to under $250 in three states (South Carolina, Tennessee, and Mississippi). These figures are state averages; they do not reveal the full extent of unequal financial support of public schools within states. Approximately as many children in each state get a better or less well-financed schooling than these averages indicate.

Some progress has been made in closing the enormous gap in financial support between lower and higher expenditure school districts, but there are still grossly indefensible differences. These are associated with wide ranges in educational opportunity and attainment.

The states with low levels of financial support have low levels of educational attainment, high illiteracy, high rejections for military service, and other socioeconomic liabilities associated with inadequate schooling. For example, in 1960 the rejections in different states in preinduction and induction examinations for military service, based on mental tests composed largely of educational material, ranged from 4.7 percent to 56.5 percent.[4]

The correlations between levels of financial support and educational status in some states are reduced by heavy migrations from regions with low per pupil expenditure to those with high per pupil expenditure. For example, states such as California, New York, and Illinois, with comparatively well-supported schools, rank near average on such items as percent of population 14 years and older unable to read and write and rejections for military service, because of heavy migrations to these states from regions where low financial support of schools and educational attainment have long existed.

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[4] National Education Association, Research Division. *Rankings of the States, 1962.* Research Report 1962-R1. Washington, D.C.: the Association, 1962. p. 32.

INEQUALITY BETWEEN SLUM AND SUBURB

Conant has recently dramatized inequality in educational opportunity from another angle. He has pointed out shocking differences in educational opportunity in different school districts within great metropolitan areas. He concludes:

> The contrast in the money spent per pupil in wealthy suburban schools and in slum schools of the large cities challenges the concept of equality of opportunity in American public education.[5]

He lists a series of improvements urgently needed in the schools of great cities, and emphasizes that "more money is needed in slum schools." [6]

The existence of slum school districts in some rural areas, those which provide inadequate or no educational opportunity for children, has been repeatedly pointed out in Congressional hearings since World War I. Now Conant points out the tragic inadequacy of the financial support of schools and of the schooling provided many youth in city slums. He labels the situation prevailing there "social dynamite."

The conditions in rural and in city slums are related. Many residents of festering city slums are migrants from poverty-stricken rural slums. Those who have balked every effort to provide an adequate minimum of financial support for the education of every child regardless of his residence are now having to face the much more difficult and expensive problem of dealing in our great cities with these victims of educational denial.

Changes in agricultural production and other factors are taking away even the meager wages earned by many who formerly lived in rural slum school districts. They and their children are flocking to great metropolitan areas in which their problems are multiplied by conditions they encounter there.

A recent report of the Educational Policies Commission points out that this "large scale migration" fails to improve the situation of the "disadvantaged American." The report summarizes the situation thus:

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[5] Conant, James B. *Slums and Suburbs: A Commentary on Schools in Metropolitan Areas.* New York: McGraw-Hill Book Co., 1961. pp. 145-46.

[6] *Ibid.*, p. 146.

> Millions of disadvantaged Americans are congregated today in congested sections of the large cities and in the rural areas. It is valid to ask what America means to these millions of people. Certainly it has not been for them a land of equal opportunity. The schools present the best hope for overcoming their cultural handicap. This has been demonstrated repeatedly wherever the efforts of skillful educators and the support of an understanding community have combined to make schools the mighty instruments which only schools can be. If the public fully backs its schools—and only if it does—the time may come when no American is culturally disadvantaged.[7]

There are several reasons why the financial support of public schools is wholly inadequate in most school districts in the United States. One of these is the inflexibility of school expenditure as related to educational need.

RESPONSE OF EXPENDITURES TO DEMANDS, 1900-58

There has been a great increase in school expenditure since the turn of the century—from $238 million to an estimated $18 billion in 1962. The significance of this rise can be appraised only when it is weighed against the demands placed upon the schools. In short, in recent years did the typical board of education in the United States have greater or less ability to provide every child in school with the kind of schooling he should have?

This is a highly complex question. It requires that account should be taken of such factors as—

1. The enormous increase in number of public school pupils, especially at the more costly high school and junior college levels.
2. The substantial lengthening of the school year throughout the United States; in some districts summer school is now also provided.
3. The great depreciation in purchasing power of the dollar since 1900.

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[7] National Education Association and American Association of School Administrators, Educational Policies Commission. *Education and the Disadvantaged American.* Washington, D.C.: National Education Association, 1962. p. 38.

The foregoing and other factors must be taken into account before financial ability to improve the quality of a given unit of schooling is increased. To provide for increased quality such factors as these must be considered:

1. Increase in the scope of the school program to meet new needs—general education for all and technical and vocational education for many, not merely college preparation for a few; guidance and health services; and other extensions of the school program in response to general need and demand
2. Increase in the preparation of teachers to teach a wider range of more difficult subjects at a higher level of performance
3. Increase in teachers' salaries to compensate for longer periods of training, to keep pace with the rapid increase in buying power of other workers, and to meet the mounting competition in the labor market for persons of ability and extended education.

FINANCIAL ABILITY

A recent study for the Joint Economic Committee of the Eighty-Sixth Congress sought "to measure the cost of an education unit, so standardized that its variety and scope are held reasonably constant, and expressed in per pupil in average daily attendance terms." [8]

The result of the study was an estimate of daily per pupil expenditure in 1954 dollars. In other words, what was the purchasing power of the expenditure for the schooling of one child for one day expressed in dollars of equivalent purchasing power? The figures are given in Table III.

The figures in Table III are, according to the study, quite appropriate to indicate the cost of a given bundle of public primary and secondary education in constant terms. The study concludes that—

> costs [of public schools] in real terms exhibit amazing stability during 1900-1958. For the years for which data are

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[8] Hirsch, Werner Z. *Analysis of Rising Costs of Public Education.* U.S. Congress, Joint Economic Committee, Study Papers 4 and 5. Washington, D.C.: Government Printing Office, 1959. p. 33.

TABLE III Daily Per Pupil Current Expenditure for Public Primary and Secondary Education

YEARS	DAILY PER PUPIL EXPENDITURE IN 1954 DOLLARS
1900	$1.48
1902	1.47
1910	1.48
1913	1.60
1920	1.50
1922	1.37
1930	1.43
1932	1.42
1940	1.39
1942	1.49
1946	1.44
1948	1.39
1950	1.40
1952	1.42
1954	1.41
1956	1.45
1958	1.45

SOURCE Hirsch, Werner Z. **Analysis of Rising Costs of Public Education.** U.S. Congress, Joint Economic Committee, Study Papers 4 and 5. Washington, D.C.: Government Printing Office, 1959. p. 34.

available, 1922 was the low year with $1.37 daily expenditure per pupil, and 1913 was the high year with $1.60. Over the 58 years an over-all decline of about 3 percent was registered.[9]

It appears that boards of education had less ability to buy first-rate education for each child for every day he was in school in 1958 than they had in 1900.

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[9] *Ibid.*, p. 34.

EQUATING EXPENDITURES AND DEMANDS

The Congressional study cited above dealt with the income elasticity of public primary and secondary education. Complex estimates in this regard were made on the basis of two concepts. The conclusion was that "no matter which of the two concepts is used, there can be little doubt that the income elasticity of public education is quite low."[10]

> It [income elasticity of public education] is low in comparison to income elasticities of other public services and in particular such consumer amenities as air conditioning, automobiles, golf, speedboats, etc. It is also low compared to what it must be if public education in the United States is to be improved.[11]

This study summarized the significance of its findings as to the income elasticity of expenditures for public schools as follows:

> Such low income elasticity of public education must be of deep concern to all those who are convinced that improvements in education are essential if the United States is to remain a leading world power.[12]

Apparently, the financing of public education in the 1960's started from a base of expenditure that allowed little or nothing for improvements in education, essential for economic growth and for other requisites for internal progress and effective leadership in the world scene. What amounts will be required to finance the requisite improvements?

COST ESTIMATES TO MEET DEMANDS

A number of responsible citizens groups have estimated the financial support necessary for the public schools to meet the rising demands being made on them.

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[10] *Ibid.*, p. 38.
[11] *Ibid.*
[12] *Ibid.*, p. 1.

Estimates by Citizens Commissions

In 1954, the Finance Committee of the National Citizens Commission for the Public Schools (Beardsley Ruml, chairman, formerly head of the Federal Reserve Bank, New York City) noted the need for "an unremitting effort to meet the growing deficit in equipment, in school buildings, and in teachers." [13]

The Committee for the White House Conference, sponsored by former President Eisenhower, reported in 1956 as follows:

> We recommend that a new look be taken at the entire question of how much money this society should spend on education. In view of the recommendations of this Committee concerning the objectives of education, teachers, and buildings, it seems obvious that within the next decade the dollars spent on education in this Nation should be approximately doubled. Such an increase in expenditure would be an accurate reflection of the importance of education in this society. . . . Good schools are admittedly expensive, but not nearly so expensive in the long run as poor ones.[14]

The special committee dealing with the financing of education at the White House Conference emphasized that "the American people want and need not only *more* schools, but *better* schools. To meet these needs we must spend more money." [15]

A 1958 estimate of the future cost of education is that of a panel of 15 prominent citizens working under the auspices of the Rockefeller Brothers Fund. The Committee analyzed various factors that place increasing burdens on education. They concluded:

> Even allowing for considerably greater efficiency in the use of educational funds, it is likely that ten years hence our schools and colleges will require at least double their present level of financial support to handle our growing student

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[13] National Citizens Commission for the Public Schools, Public Education Finance Committee. *Financing Public Education in the Decade Ahead.* New York: the Commission, 1954. Foreword.

[14] Committee for the White House Conference. *A Report to the President.* Washington, D.C.: Government Printing Office, 1956. pp. 6-7.

[15] *Ibid.*, p. 51.

> population. In other words, by 1967 the entire educational effort is likely to call for expenditures on the order of $30 billion, measured in today's prices.[16]

The foregoing estimate seems conservative, since the U.S. Department of Health, Education, and Welfare estimated in August 1962 that total expenditures for education (public, private; elementary, secondary, and higher) would be $25.2 billion in 1962.[17]

Conant refers to various measures of the deficits of current expenditures per pupil. One calculation reports a deficit between educational needs and actual expenditures for 1958-59 of $8.2 billion.[18]

Another study under the auspices of the Committee for Economic Development comes to this conclusion:

> The public schools have not, thus far, been engulfed by the wave of school-age children. The resources going into public education have, in fact, been increasing somewhat faster than enrollments, although clearly less than is necessary to meet widespread desire for excellence.[19]

The foregoing study stated:

> We estimate that if resources per pupil were held constant, the cost of public schools, with prices in the private economy stable, would rise 31 per cent from 1958-59 to 1964-65. From 1958-59 to 1969-70 the increase would be 47 per cent.[20]

The conclusions of the Committee for Economic Development were not accepted by all members. William Benton, in dissent, stated:

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[16] Rockefeller Brothers Fund. *The Pursuit of Excellence—Education and the Future of America.* Panel Report V of the Special Studies Project. Garden City, N.Y.: Doubleday & Co., 1958. p. 34.

[17] The estimates of the Rockefeller Brothers Fund and those of the U.S. Department of Health, Education, and Welfare are only approximately comparable in scope of educational activities included.

[18] Conant, James B. *The Child, the Parent and the State.* Cambridge, Mass.: Harvard University Press, 1959. p. 183.

[19] Committee for Economic Development, Research and Policy Committee. *Paying for Better Schools.* New York: Committee for Economic Development, 1959. p. 14.

[20] *Ibid.*, p. 20.

> I feel strongly that the recommendations in this report do not match the national emergency. But I commend the C.E.D. for a report on education more courageous and forthright than any issued by an organization representing the business community. The statement is to be applauded for recognizing the acute crisis in education. . . .[21]

Recently an estimate was made of the cost of implementing the proposals of the Commission on National Goals appointed by former President Eisenhower.[22] Education was one of the areas considered. It was estimated that an increase of $13 billion per year in public expenditures for education would be necessary to finance the higher goals set for education.[23] This estimate was based on an improvement factor in financial support per year of just under 5 percent to achieve the desired standards.

Estimates by National Education Association

The most recent study of needed current expenditures for public schools to provide for quality education was made by the National Education Association and estimates a cost (in 1959-60 prices) of $33.6 billion in 1969-70, as compared with $12.3 billion in 1959-60.[24] The basis of this estimate is summarized as follows: This cost projection sought to estimate the price of quality education in 1969-70 under the assumptions of near maximum enrollment in kindergarten through high school, of a professional staff of adequate size, and paid at the national market rate of other professional workers with equivalent training and experience.

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[21] *Ibid.*, p. 6.

[22] President's Commission on National Goals. *Goals for Americans.* Englewood Cliffs, N.J.: Prentice-Hall, 1960. 372 pp.

[23] Universities National Bureau, Committee for Economic Research. *Public Finances: Needs, Sources, and Utilization.* Report of the National Bureau of Economic Research. Princeton, N.J.: Princeton University Press, 1961. 512 pp. See also Hazard, Leland. "Can We Afford Our National Goals?" *Harvard Business Review* 40: 10; May-June 1962.

[24] National Education Association, Special Project on School Finance. *Financing the Public Schools, 1960-1970.* Washington, D.C.: the Association, 1962. p. 133.

A number of statements have given considered views concerning future responsibilities and financial needs of education. One such statement was made by Walter Lippman, who was a member of the National Citizens Commission for the Public Schools. He asked in 1954:

> Can it be denied that the educational effort is inadequate? I do not mean that we are doing a little too little. I mean that we are doing much too little.
>
> We have to do in the educational system something very like what we have done in the military establishment during the past fifteen years. . . . We must measure our educational effort as we do our military effort. That is to say, we must measure it not by what it would be easy and convenient to do, but by what it is necessary to do in order that the nation may survive and flourish.[25]

The panel of prominent citizens referred to earlier reached this general conclusion concerning what it would take to achieve excellence in education:

> It will not be enough to meet the problem grudgingly or with a little more money. The Nation's need for good education is immediate, and good education is expensive. That is a fact which the American people have never been quite prepared to face. . . .
>
> Perhaps the greatest problem facing American education is the widely held view that all we require are a few more teachers, a few more buildings, a little more money. Such an approach will be disastrous. We are moving into the most demanding era in our history. An educational system grudgingly and tardily patched to meet the needs of the moment will be perpetually out of date. We must build for the future in education as daringly and aggressively as we have built other aspects of our national life in the past.[26]

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[25] Lippman, Walter. "Education for Leadership." *Citizens and Their Schools.* New York: National Citizens Commission for the Public Schools, 1954. pp. 24-25.

[26] Rockefeller Brothers Fund, *op. cit.*, p. 33.

ABILITY TO FINANCE QUALITY SCHOOLS

Whether one accepts the lower or the higher estimates of future public school needs and costs, they involve amounts that will not be easy to raise. Success in financing whatever level of support is decided upon for public education will depend on two major factors that are closely related: The first is the understanding and attitude of the people toward public education. The second factor is the means which the people adopt in raising the revenues for school support and for its equitable distribution among the public school systems of the United States. The next section of this report deals with these two matters.

STATE
FEDERAL

Fiscal Implications

XI

Basic to adequate financing of public schools in the United States is acceptance of the fact that such support is an investment that brings economic as well as other returns to our society.

ABILITY TO FINANCE PUBLIC EDUCATION

One need not credit a high percentage of the income of our affluent society to the effects of education to rate this public service as a productive investment. The gross national product of the United States, according to the latest available estimate for the middle of 1962, had reached $552 billion.[1] In the light of recent economic research it would seem a low estimate to credit 10 percent of this figure, or $52 billion, to the economic effects of education. Less than one-half of this figure, or $25 billion, is being expended this year by educational institutions, from kindergarten through university, both public and private. Total expenditures for public elementary and secondary schools in 1961-62 were $18 billion—for current expenses and for school building construction and other capital outlays.

There can be no question of our economic ability, whether considered from the view of our unequalled opulence or of the significance of education as a factor in production, to pay for the amount and quality of public education necessary to meet our needs.

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[1] Federal Reserve System, Board of Governors. *Federal Reserve Bulletin.* Washington, D.C.: Government Printing Office, October 1962. p. 1356.

The Issue of Choice

The issue is one of choice. If we choose to give public education reasonably high priority among our public and private expenditures, then no child need suffer the consequences of inadequate schooling, nor will the nation as a whole lack development of its human resources because of insufficient investment in education.

The choices involved in this process will often not be easy. Human capacity for consumption is almost limitless. The mechanisms that have been developed to increase the desire for public and private expenditure are both pervasive and powerful. Even our fabulously productive economy is not able to fulfill every fleeting desire for more and more goods and services.

But assuming that we place expenditure for public education above some of our private luxuries and take due account of its importance in budgeting public expenditure, there are still difficulties to be overcome.

REMOVAL OF FISCAL OBSTACLES

There has grown up a series of obstacles that frequently balk people's desire to pay for education. These have accumulated over the years due to (a) inaction in the face of changing conditions and (b) ill-considered action intended to keep public expenditures for schools at a scarcity level.

Local Blocks

A number of blocks to action at the local level are of especial fiscal significance since 56 percent of the cost of public schools is raised in the locality.

Most local school money comes from a tax on property. This has been a mainstay of public school support and should continue to pay a just share of school costs in the future. It is well suited for local use. It is important as a fiscal factor in continuing substantial control of schools in the locality.

However, the local property tax has its limitations as a principal source of school revenue. Some states place unduly restrictive limits on local property-taxing powers. These restrict the amount that a board of education and the people may raise from this source. The upper tax limit placed on local property may be reasonable, but this is often lowered, in effect, by assessment of property far below its real value. A tax limit of 15 mills on full value of property, when property assessments are dropped to one-third full value, is only 5 mills.

In some states there is excessive exemption of property from taxation. This may place an undue share of the cost of public education on taxable property. Also, in many localities inequalities in assessment of property are rife. Different types of property may be assessed at widely differing rates, even though uniform assessment is required by state law. Thus, resistance to taxation is enhanced by feelings of injustice.

Property valuations per pupil in local school districts vary greatly—in some states as much as 100 to 1. Some localities can provide substantial local revenue on nominal tax rates. Others could not provide such revenue even if they levied confiscatory rates on property. The result in the latter districts may be denial of adequate schooling for some if not all children.

Local Tax Reform

Reform of the local tax picture as it concerns public schools lies in such actions as correction of arbitrary limits on rates of property taxation, assessment of property at full value, avoidance of excessive exemption of property from taxation, and recognition that the financial support of schools cannot rest solely upon taxes on property. Nor can other forms of local taxation do the job, even when schools are allocated revenue from these new sources. Realization of this fact accounts for recent increased state action in financing public schools.

State Action

This action has taken a number of directions. One of the essential state actions is to correct, by appropriate state legislation, defects in the structure of local school finance such as those identified above.

Substantial amounts raised through state taxation are being allocated to the localities for school support. These state funds are raised by a broadening of the sources of tax revenue to include such state taxes as those on sales and gross receipts, individual and corporation net incomes, motor vehicle fuel and registration fees, and such various miscellaneous taxes as those on tobacco and alcoholic beverages.[2]

Currently, 40 percent of public elementary and secondary school revenue comes from the state level of government. This percentage varies widely, from as much as 81 percent in Delaware to 6 percent in New Hampshire.

State funds for public school support are distributed to the localities on several bases. Some state money is usually distributed on a flat grant basis—so much per pupil in daily attendance. Additional funds are allocated on an equalization basis, that is, the state sets a foundation or minimum level of cost per pupil to be available in every school district. The state then provides the difference between (a) what can be raised in each locality by an equitable and reasonable tax effort and (b) the amount required to finance the prescribed state minimum. Localities are permitted and encouraged to raise more than is required to receive state funds.

Bases of State Action

State action in providing public school support is based on a number of considerations: First, state constitutions make the maintenance of public schools that are open to all a responsibility of the state legislature. Second, educational opportunity is the right of every child. Third, education of all children is more than a matter of local concern. Mobility of population quickly spreads the effects of good schools as well as of poor schools. A state cannot afford to have the quality of its human capital diluted by lack of financial ability or willingness to maintain effective schools. Fourth, since communities differ so widely in ability to finance schools, state support is essential if gross inequality in the financing of public schools and inequitable tax rates, in different school districts, are to be prevented.

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[2] U.S. Department of Commerce, Bureau of the Census. *Detail of State Tax Collections in 1962.* Washington, D.C.: Government Printing Office, 1962. p. 3.

Limitations of the States

The state level of government has an indispensable role to play in financing public schools. However, the states have met their responsibility for providing adequate schooling for all with varying effectiveness. Several factors are responsible.

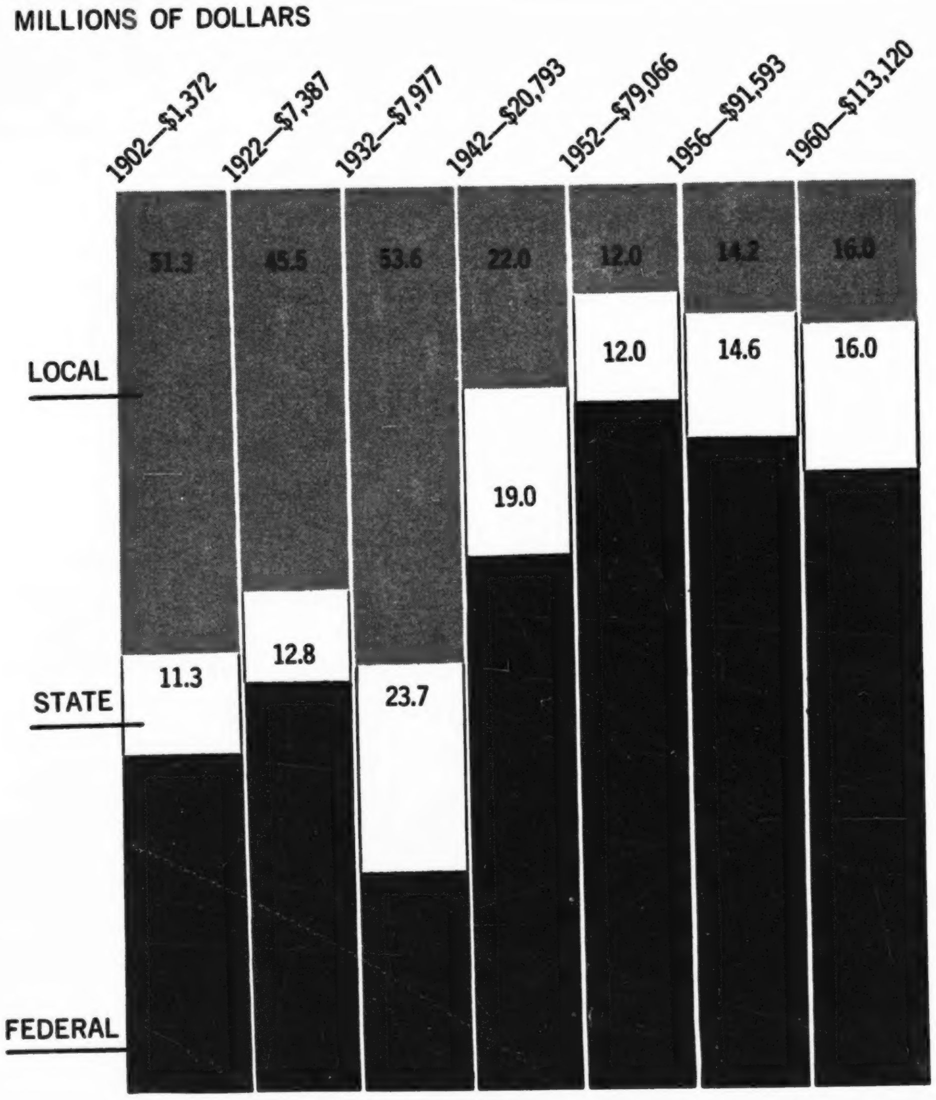
The states differ markedly in taxable capacity. This has resulted in a wide range in average expenditure per pupil in public elementary and secondary schools. In 1961-62 this average varied from $220 per pupil in the state of lowest expenditure to $615 in the state of highest expenditure. This latter average figure is much below that of well-financed schools. Also, an average expenditure hides the extremes in financial support of schools in a state, and these are usually wide. Furthermore, average expenditure per pupil in attendance takes no account of those not in attendance. Irregular attendance and early elimination from school account for much of the functional illiteracy and inadequate schooling described earlier in this report.

Federal Tax Collections

Two developments at the federal level have had heavy impacts on the financing of public education. First, during this century, federal taxes have risen from a minor to a major percentage of total taxes—federal, state, and local (see Fig. 4). The rapid rise in federal tax collections has increased the problem of the schools in securing sufficient financial support from the state, and especially from the locality where more than one-half of school money is raised.

Second, the impact on local and state support of public education of the rapid rise in federal tax collections has been compounded by discrimination against the schools by the federal government in the allocation of funds to the states.

FIGURE 4 Total Tax Revenue and Percent Collected by Local, State, Federal Government, 1902-60



SOURCES

For tax revenue, 1902-56: U.S. Department of Commerce, Bureau of the Census. **Historical Statistics of the United States, Colonial Times to 1957.** Washington, D.C.: Government Printing Office, 1960. p. 722

For tax revenue, 1960: U.S. Department of Commerce, Bureau of the Census. **Statistical Abstract of the United States, 1962.** Washington, D.C.: Government Printing Office, 1962. p. 415.

Federal grants to the states for such undertakings as highway construction, housing, hospitals, relief of unemployment, and other forms of relief have been greatly increased. These federal allocations have usually required matching appropriations by the state. This practice, regardless of merits in itself, influences the states to match the federal allocations for the services aided.

The public schools have received comparatively small grants from the federal government. It has aided a scattering of special educational undertakings in the states, but federal revenues are a small and decreasing factor in financing public schools. School revenue derived from federal sources reached a peak of 4.6 percent of total school revenue in 1955-56 and declined to 3.7 percent in 1961-62.

One of the federal allocations is for school support in "federally affected areas," that is, localities where undertakings of the federal government have been responsible for large increases in school attendance and expenditures for school buildings. The provision of $200 million for a few school districts in 1958-59 takes no account of the fact that federal taxation has profoundly affected the ability of all areas in the United States to finance public schools.

Federal Support for Education

The proposal to provide federal funds for general support of public education has become a perennial and controversial issue. National aid to education antedated the Constitution of the United States in the form of commitment to a policy of allocating public lands for public schools. In 1862, the Morrill Act provided for the establishment of the land-grant colleges. Other federally financed educational undertakings affecting agriculture are described in an earlier section.

The modern period of federal interest in education began early in this century and was given great impetus by the low educational status of an alarming percentage of our young men, revealed in the examination of recruits during World War I.

The federal government now finances scores of special educational undertakings. These include grants for specific programs, some administered by the states and some by the federal government. Federal funds for these educational programs totaled $2.4 billion in 1958-59.[3]

The demand for general financial aid for public education has come up in every Congress for more than a generation. Thus far this demand has not been met. Consideration of such action has been overridden by opposition from various interest groups.

An extensive library of publications dealing with the issue of federal support of education has accumulated over the years. Examples of some of the more comprehensive works are listed in the footnote.[4]

Whether public education can be adequately financed without federal funds to meet the changing and growing demands being made on it is a moot question. That federal aid for education will continue to be an issue in future sessions of the Congress of the United States appears to be certain.

Today the federal government pre-empts the greater part of tax revenues. It has allocated substantial sums to the states to aid in financing a widening range of public services, yet nothing has been appropriated for the general support of public elementary and secondary schools. Many consider this situation the principal fiscal obstacle to the adequate financing of public education in the United States.

Conant analyzes the situation as follows:

> In the next decade, one of three things seems to me inevitable. Either our state taxing machinery will have to improve drastically in many states, or Congress will have to

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[3] U.S. Department of Health, Education, and Welfare, Office of Education. *Federal Funds for Education.* Washington, D.C.: Government Printing Office, 1961. p. 29.

[4] Norton, John K. "Federal Relations to Education." *Encyclopedia of Educational Research.* (Edited by Chester R. Harris.) Third edition. New York: Macmillian Co., 1960. pp. 522-44.

U.S. 87th Congress, 1st Session, House of Representatives. *Federal Aid to Schools: Hearings.* Parts I and II. Washington, D.C.: Government Printing Office, 1961.

Suffrin, Sidney C. *Issues in Federal Aid to Education.* Syracuse, N.Y.: Syracuse University Press, 1962. 64 pp.

Quattlebaum, Charles A. *Federal Educational Policies, Programs, and Proposals.* U.S. 86th Congress, 2nd Session, House of Representatives Committee on Education and Labor. Washington, D.C.: Government Printing Office, 1960. Part I, 192 pp.; Part II, 372 pp.; Part III, 234 pp.

> start large annual appropriations for public schools, or public education in many states will deteriorate or, at best, stand still at the present unsatisfactory level. If education is as vital to our survival in this deeply divided world as I have portrayed it, leaders of opinion throughout the land, to my mind, should be pondering these alternatives.[5]

If it should become the policy of the federal government to allocate funds to the states for the general support of the public schools, we have experience to guide us in distributing these funds so as to achieve effective educational results.

Technical procedures have been developed whereby state funds can be distributed to the localities equitably and effectively to provide desired amounts for the education of each child, with a minimum of central control. This experience plus that already gained in the distribution of federal special aid grants would be applicable to the distribution of federal funds to the states for the general support of public schools.

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[5] Conant, James B. *The Child, the Parent and the State.* Cambridge, Mass.: Harvard University Press, 1959. p. 57.

Findings and Conclusions

XII

Basic research, application of new knowledge to industrial processes, and automation are remaking the economy of the United States. The depth and speed of economic change are having heavy impacts on the labor force and on education.

IMPACTS ON THE LABOR FORCE

Our population as a whole must have more and better general education. This is essential if the labor force is to have the educational background and flexibility of mind required to respond to rapid occupational change. Some old occupations decline in numbers, and some disappear. New ones arise. Retraining and even lifetime learning are becoming the price of employment.

A larger percentage of the labor force must have advanced technical and professional education. There is also a rising demand for skilled and semiskilled workers. But the opportunities for employment of unskilled workers and laborers are declining and will continue to do so.

The insistent calls for more and more highly trained and skilled workers and the declining demand for unskilled workers are bringing about major changes in the composition of the labor force of the United States. In 1956, for the first time in our history, the majority of the employed population were classified as white collar workers. It is estimated that by 1970 white collar workers will far outnumber blue collar workers.

IMPACTS ON EDUCATION

Occupational changes hold many implications for public education. The schools and colleges must provide more and better basic and general education. These institutions must provide more personnel with advanced technical and professional education. They must provide alone, or in cooperation with various public and private agencies, a labor force with a growing percentage of skilled and semiskilled workers.

The rising demands of our technological economy for trained manpower are being met to a degree by our educational institutions. The level of schooling of our population is rising. A larger percentage of highly educated, professional, technical, and skilled personnel is being supplied. The professions and industry readily absorb the increased flow of the more highly trained.

Technological progress and automation increase productivity, but they also breed serious problems for many individuals. There is an insidious growth of unemployment in a number of occupational fields and especially in agriculture. When the jobs of older workers disappear, they find it difficult to prepare for and find new ones. Unemployment among dropouts from the schools is much higher than in the labor force as a whole.

As hundreds of thousands of jobs are wiped out, new ones appear. But many who lose their jobs cannot qualify for them. They lack the training required.

Many proposals are being made to correct the imbalance between the training demanded and that possessed by our manpower. There is no general agreement as to how the needed training and retraining can be accomplished. However, all proposals include needed improvements in the offerings of the public schools. These range from action to eliminate illiteracy and to step up the level of general education of our whole population, to the provision of much more effective programs of technical and subprofessional training.

Such educational improvements will require substantial additional expenditures. Can the cost be met? The answer depends in large degree upon the public's conception of the economic significance of education.

EDUCATION AS INVESTMENT

Economic research is leading toward the conclusion that expenditures for education are more than a tax levy against the economy. Educational expenditures are a productive investment.

INDIVIDUAL RETURNS

It has long been known that persons with larger amounts of education earn larger incomes. Research is beginning to disentangle the various factors, including schooling, which result in increased individual earnings. It appears that the direct returns to individuals, solely from investment in schooling, are at least as high as other forms of investment. Even though the general level of schooling has continued to rise during the past generation, the substantial differentials in the average earnings of those with less schooling and those with more schooling have continued to hold.

INCREASED NATIONAL PRODUCTIVITY

Probably more important than the economic research that has revealed the benefits to individuals from investment in education are studies that take account of the diffused, indirect benefits that increase national productivity. Some economists are suggesting that investment in human capital, in such forms as education and health services, deserves to rank with investment in physical capital as a factor in economic progress.

The rapid growth in the productivity of agriculture in the United States is of special significance. Agricultural output has continued to mount, although the acreage under cultivation and the number of agricultural workers both continue to decline. Some economists claim that the agricultural revolution in the United States is in large degree the outcome of the comprehensive program of educational investment in agriculture which has been developed during the past century. The farmers in the United States are the only occupational group that has enjoyed substantial public investment in general education, in specialized instruction at both the secondary and higher education levels, in research and experimentation, and in an extension program providing for the rapid dissemination of new knowledge.

The relation of education to economic growth is now a matter of world-wide study. It shows that there is a high correlation between literacy and per capita production among the nations of the world. No illiterate nation has achieved a high level of productivity; all literate nations have relatively high per capita incomes.

The educational level attained by a nation's population is more important than the possession of natural resources in determining its per capita income.

In some nations that possess abundant natural resources, people live in semistarvation. Other nations that have invested in human capital have achieved high productivity, even though they have meager natural resources.

The rapid economic growth of the USSR is partly the result of heavy investment in education made since the Bolshevik revolution.

The superior productivity of Western Europe is in part an outcome of its early establishment of universal education. Its rapid recovery after World War II was facilitated by its stock of educated human capital. The lack of such capital in the less-developed nations is partly responsible for their laggard economic gains.

Probably the most significant returns from investment in education are certain qualities and insights that are essential for growth in economic as well as other spheres of life. Education contributes to the development of a literate and informed people capable of maintaining free institutions and achieving democratic aims. Education helps in maintaining the degree of political and social stability that is essential for economic and other forms of national growth. Education develops respect for scientific research and for the new knowledge it discovers. Education aids in developing readiness to apply new knowledge to economic and other areas of life. Education plays a major role in developing the specialized technicians and the broadly educated and responsible leaders demanded in all fields in a complex and highly developed society such as that of the United States.

It is imperative that we recognize the many and highly significant returns which accrue from wise investment in education. It is also imperative that we avoid the social penalties that have their origins in neglect of education.

PENALTIES OF INADEQUATE SCHOOLING

It is a shocking fact that while the United States stands for equality of opportunity, it permits gross inequalities in educational opportunity.

Far too high a percent of our citizens suffer handicaps that result from lack of functional literacy. Fewer and fewer children are denied schooling completely, but many children attend poor schools and only for a short period. Lack of adequate schooling, both as to quality and amount, is partly responsible for the millions of disadvantaged Americans who have recently been migrating from underdeveloped rural slums to congested urban slums.

Low educational achievement is associated with low earning capacity, unemployment, high rates of rejection for military service, and dependence on various types of relief.

The plight of the dropouts from school deserves special attention. They are thrown into a labor market where there is a declining demand for unskilled labor. The possibility of their being called for military training discourages employers from offering them opportunity for employment and training. The out-of-school, unemployed youth is a potential delinquent.

Adequate schooling is one of the factors which can aid in ameliorating some of our most serious social problems. Provision of adequate schooling for all is fully justified solely on the basis of our commitment to equality of opportunity. The cost of providing education, right in amount and kind for every child, would probably be less than expenditures to cure the results of inadequate schooling.

MAXIMIZING RETURNS

To realize full economic and other benefits from investment in education will require several types of action. There must be quality schools available and attended by all children and youth in all communities. Good schools require well-prepared teachers, adequate school buildings, and other essential physical facilities. These are lacking in too many communities today.

Curricula must be developed that take account of the wide range of aptitudes and life goals of the heterogeneous population now enrolled in public schools. There must be full response to the fact that those in the upper grades of elementary schools and in high schools are no longer a select group. Public schools now include the talented and those of average and below-average ability.

Accordingly, the public school program must provide more than a single track of general education for all. There must also be varied provisions for all groups, so that the nation may fully capitalize on its total human resources.

There must be effective guidance programs in every school system to help each student achieve his potential. Well-trained guidance counselors with facilities for effective performance must reduce waste of human resources.

COUNTING THE COST

Substantial increases in expenditures for public schools will be required if economic and other returns from investment in human capital are to be maximized. While money is not everything in providing quality schooling, it is something. Quality schools almost universally are high-expenditure schools.

The problem is one of making additional funds count most in buying the quality of schooling demanded by the type of society and economy to which we aspire.

Currently wide variations in the quality of schools in the United States are in considerable degree a result of enormous and indefensible differences in the financial support of schools in different regions and localities. States and communities with low levels of financial support for schools are the sources of millions of disadvantaged citizens.

There has been inadequate response in school expenditures to the mounting demands made upon the schools. Between 1900 and 1958, the purchasing power of the money available to pay for each day of schooling provided in public schools declined. Taking account of all factors, boards of education in the United States generally had less ability to buy first-rate schooling for each child, for each day he was in school, in 1958 than in 1900.

A recent Congressional study concluded that this low elasticity in the support of public schools should be of deep concern to those convinced that improvements in education are essential if the United States is to remain a leading world power.

A number of citizens committees have estimated what it would cost to finance quality schools in all communities in the United States. They agree that there must be a substantial increase in school expenditures to achieve this end. Their estimates are that approximately a doubling of present expenditures for public schools will be needed during the 1960's.

Adequate support for public schools will require decisive action on the part of many citizens. There must be recognition that investment in public education pays handsome dividends. The fiscal obstacles that now block the road to adequate financial support for public education must be removed.

The rewards of decisive and intelligent action in providing excellent schools everywhere in the United States would be substantial. The penalties of failure in this regard would be severe. Leaders throughout the nation should ponder these alternatives with great care.